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THE NEW
INTERNATIONAL
YEAR BOOK

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THE NEW INTERNATIONAL YEAR BOOK

A COMPENDIUM OF THE WORLD'S
PROGRESS

FOR THE YEAR

1939

EDITOR

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PREFACE

AGAIN this year, as in past years, the NEW INTERNATIONAL YEAR BOOK presents the developments in all major lines of human activity throughout the globe. The connected story for 1939 is within these pages. The files of last year's newspapers, news weeklies, journals, bulletins, and reports have been culled and assembled so as to miss no important statistical, political, legislative, or historical event in any State or in any nation of the world; to cover every major development in science, art, religion, law, sports, agriculture, business, and so on; to report all notable aims in all phases of sociology; to record the year's contributions in the literature of the leading languages of Europe and the Americas, and so on and on.

Though the shadow of the European War is seen upon almost every page in this record, it may be that the most important event of the year to the nations of North and South America was the meeting of a few score men last autumn in Panama City. Whatever the outcome of the European struggle, it is certain that years will pass before normal trade can be resumed between the Eastern and Western Hemispheres. The Americas will be forced into closer relations, and, it may well be, into closer cultural relations. The Panama Conference of September-October, with official representatives from 21 American nations participating, was a long stride toward the consummation of such ends, though the immediate purpose of the Conference was to devise effective means to preserve the neutrality of the western nations from the European imbroglio that threatened the entire world.

Naturally, in every mind during 1939 were the prospects of war in Europe, and, when it did come, its successive operations on land and sea and the subsequent involvement of Finland and Russia. Military matters have therefore been transcendent and have, accordingly, received special treatment in the YEAR BOOK. Hanson W. Baldwin, military and naval correspondent of *The New York Times*, in his article, EUROPEAN WAR, has covered every development of the conflict itself, while the internal affairs and diplomatic proceedings of the countries involved are properly reported within the historical treatment of each of the nations. Maps and illustrations, in greater number than in previous years, accompany these articles and show, among other things, the fronts upon which fighting occurred, the conditions under which modern warfare is conducted, and the devastating results of such warfare, and the prominent military leaders and statesmen of 1939. Military progress, covering the armies of the world, is presented by Major R. Ernest Dupuy, U.S.A., and Captain C. H. McMorris, U.S.N., describes the status of the navies of the world. The effects of the war itself upon the United States can not help but be reflected in almost every topic herein, from art to zoology, for it has by no means confined its tentacles to the few nations actually involved; but, as bringing the war closer home, the articles NEUTRALITY, WAR RELIEF, and various sections under BUSINESS and FINANCE, will be of particular interest.

No sooner had Poland been occupied in September than was the refugee problem vastly magnified. Not only was the plight of the Jews made more desperate, but also Polish nationals were added to Czechs, Spaniards, and others whom war and political machinations had driven from their countries. The Jewish situation as it was in 1939 is described separately this year by Marvin Lowenthal, while the larger aspect of the entire problem of the refugee, both Jewish and political, and the steps toward solving it are discussed by Myron C. Taylor, who represents the United States on the Intergovernmental Committee on Political Refugees and by James G. McDonald, former High Commissioner, of the League of Nations, for Refugees Coming from Germany.

Many new names have been added to our list of contributing editors, all selected with an aim to establish even greater authority in the presentation of information than the YEAR BOOK has previously enjoyed. The new contributors are too numerous to justify separate mention here, but are named upon the immediately following pages along with other contributing and staff editors. Also, many new topics are presented this year for the first time, some necessitated by special requirements of the year, and others which the present editor believes to be of such importance as to warrant annual presentation. Among the latter are, especially, those relating to newly expanding phases of commerce and industry.

Other modifications effected in this issue are, (1) full coverage of the major Federal agencies, in most cases presented by the head of each such agency; (2) an increased scope in the realm of education, with an outstanding résumé by Dr. Charles Hubbard Judd as the feature; (3) specific emphasis upon labor and labor conditions, with the review, national and international in scope, by William M. Leiserson as the core, as well as individual articles by William Green and John L. Lewis to present the activities and aims of the organizations which they head.

The reader will also note that certain material of steady interest has been grouped into lists; as, AMBASSADORS AND MINISTERS of and to foreign countries; ARMAMENTS OF THE WORLD; BROADCASTING STATIONS of 50-KW or more; MANDATED TERRITORIES; MEMBERS OF CONGRESS; RELIEF EXPENDITURES; RELIGIOUS ORGANIZATIONS.

PREFACE

It is doubtful if one could point to a single feature in the book and say "That article deserves first consideration." A physician would proclaim that Dr. Cochran's review of *MEDICINE AND SURGERY* should be read by every doctor in the country; a criminologist would vote for Mr. Bennett's article on *PRISONS AND CRIME CONTROL*; a business man or banker would say that Dr. Bogen's *BUSINESS REVIEW* was the clearest analysis of the effect of the European War on business that he had seen; while the teacher of current history and the economist would again select Mr. Kain's masterly summaries of the nations of the world and Mr. Coan's reviews of each of our own States and of the United States as a whole.

The editor can not close without acknowledging his deep gratitude to each of the members of his staff, without whose hearty co-operation the many improved features in the Annual could scarcely have been successfully accomplished. Especially he extends his thanks to Mr. Ronald S. Kain, Miss Mamie Harmon, and Miss Helen Ready Bird, who shared with him the heavy task of redesigning the *YEAR BOOK* and who have been equally unremitting in the effort to attain the goal set for it. Though he is indebted to a number of Federal bureaus or their representatives for statistical and other material, he acknowledges a special debt to Mr. Louis Domeratzky, Chief of the Division of Regional Information, Department of Commerce, for the invaluable co-operation of his office in supplying statistical information upon foreign nations. He also wishes to thank those of the former contributing editors who cheerfully accepted the suggestions that were made toward bringing this Annual into more perfect balance, and he is certain that the reader will also welcome the many new contributors to this issue.

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KEY TO PRONUNCIATION

ā as in ale, fate. Also see **ē**, below.
â " " senate, chaotic.
ä " " glare, care, and as *e* in there. See **ē**, below.
ā " " am, at.
ā " " arm, father.
ā " " ant, and final *a* in America, armada, etc.
 In rapid speech this vowel readily becomes more or less obscured and like the neutral vowel or a short *u* (**ū**).
a " " final, regal, where it is of a neutral or obscure quality.
ā " " all, fall.
ē " " eve.
ē " " elate, evade.
ē " " end, pet. The characters **ē**, **ā**, and **ā** are used for **ā**, **ae** in German, as in Baedeker, Gräfe, Händel, to the values of which they are the nearest English vowel sounds. The sound of Swedish **ā** is also sometimes indicated by **ē**, sometimes by **ā** or **ā**.
ē " " fern, her, and as *i* in sir. Also for **ō**, **oe**, in German, as in Göthe, Goethe, Ortel, Oertel, and for *eu* and **œu** in French, as in Neufchâtel, Crèvecoeur; to which it is the nearest English vowel sound.
e " " agency, judgment, where it is of a neutral or obscure quality, **ē**.
ī " " ice, quiet.
ī " " quiescent.
ī " " ill, fit.
ō " " old, sober.
ō " " obey, sobriety.
ō " " orb, nor.
ō " " odd, forest, not.
o " " atom, carol, where it has a neutral or obscure quality.
oi " " oil, boil, and for *eu* in German, as in Feuerbach.
ōō " " food, fool, and as *u* in rude, rule.
ōō " " foot, wool.
ou " " house, mouse.
ū " " use, mule.
ū " " unite.
ū " " cut, but.
u " " full, put, or as *oo* in foot, book. Also for **ū** in German, as in München, Müller, and *u* in French, as in Buchez, Budé; to which it approximates in English.
ū " " urn, burn.
y " " yet, yield.
ɸ " " the Spanish Habana, Córdoba, where it is like a *v* made with the lips alone, instead of with the teeth and lips.
ch " " chair, cheese.

D as in the Spanish Almodovar, pulgada, where it is nearly like *th* in English then, this.
g " " go, get.
g " " the German Landtag, and *ch* in Feuerbach, buch; where it is a guttural sound made with the back part of the tongue raised toward the soft palate, as in the sound made in clearing the throat.
h " *j* in the Spanish Jijona, *g* in the Spanish gila; where it is a fricative somewhat resembling the sound of *h* in English hue or *y* in yet, but stronger.
hw " *wh* in which.
κ " *ch* in the German ich, Albrecht, and *g* in the German Arensburg, Mecklenburg; where it is a fricative sound made between the tongue and the hard palate toward which the tongue is raised. It resembles the sound of *h* in hue, or *y* in yet; or the sound made by beginning to pronounce a *k*, but not completing the stoppage of the breath. The character **κ** is also used to indicate the rough aspirates or fricatives of some of the Oriental languages, as of *kh* in the word Khan.
ŋ " in sinker, longer.
ng " " sing, long.
N " " the French bon, Bourbon, and *m* in the French Étampes; where it is equivalent to a nasalizing of the preceding vowel. This effect is approximately produced by attempting to pronounce "onion" without touching the tip of the tongue to the roof of the mouth. The corresponding nasal of Portuguese is also indicated by **N**, as in the case of São Antão.
sh " " shine, shut.
th " " thrust, thin.
TH " " then, this.
zh " *z* in azure, and *s* in pleasure.
 An apostrophe [**’**] is sometimes used to denote a glide or neutral connecting vowel, as in tā**’**b’l (table), kǎz**’**m (chasm).
 Otherwise than as noted above, the letters used in the respellings for pronunciation are, to receive their ordinary English sounds.
 When the pronunciation is sufficiently shown by indicating the accented syllables, this is done without respelling; as in the case of very common English and other words which are correctly accented. Pronunciation is discussed fully in THE NEW INTERNATIONAL ENCYCLOPÆDIA and in the NEW STANDARD DICTIONARY.

THE NEW INTERNATIONAL YEAR BOOK

AAA. AGRICULTURAL ADJUSTMENT ADMINISTRATION (q.v.).

ABBOTT, GRACE. An American social worker, died in Chicago, Ill., June 19, 1939. Born in Grand Island, Neb., Nov. 17, 1878, educated at Grand Island College (Ph.B., 1898; LL.D., 1931), attended the University of Nebraska during 1902-03, and received the degree of Ph.M. in political science at the University of Chicago (1909). She taught for a few years in the Grand Island High School until 1907, when she went to Chicago and became director of the Immigrants' Protective League and a resident worker at Hull House (1908-15). From 1910 to 1917 she was a member of the faculty of the Chicago School of Civics and Philanthropy, and during 1913-14 also served as executive secretary of the Massachusetts State Immigrants' Commission.

In 1917 she was appointed by President Wilson director of the newly-created child labor division of the Children's Bureau to administer the Child Labor Law. When this law was pronounced unconstitutional and her position was abolished, she remained in Washington as an adviser to the War Labor Policies Board (1918) and as secretary of the Child Welfare Conference called by the Children's Bureau at the request of the President in 1919. During 1920-21 she was executive secretary of the Illinois Immigrants' Commission. In 1921 President Harding appointed her head of the Children's Bureau, where she remained until her resignation in 1934 to become professor of public welfare and editor of the *Social Service Review* at the University of Chicago.

Miss Abbott was a pioneer in the fight for the child labor amendment and for social security legislation and she labored constantly to decrease infant and maternal mortality and juvenile delinquency. In 1923 she became the United States member of the advisory commission of the League of Nations on traffic in women and children, and in 1924 was president of the National Conference of Social Work. Also, she was a government delegate to the International Labor Conferences (1933, 1937) and headed the delegation in 1938. Besides many honorary degrees, she received the gold medal of the American Social Science Association, and was named one of the 12 outstanding women of America in a poll conducted by *Good Housekeeping* in 1931. In 1935 *Parents Magazine* awarded her its gold medal. The editor of many of the publications of the Children's Bureau and a contributor to magazines, she was the author of *The Immigrant and the Community*

(1916) and an authoritative work entitled *The Child and the State* (2 vol., 1938).

ABKHAZIAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See GEORGIAN SOVIET SOCIALIST REPUBLIC.

ABYSSINIA (ETHIOPIA). See ITALIAN EAST AFRICA.

ACADEMY, FRENCH (ACADÉMIE FRANÇAISE). The oldest of the five academies which make up the Institute of France and officially considered the highest; founded in 1635. The membership is limited to 40. The list of the Immortals in 1939, in order of their election, was as follows: Gabriel Hanotaux; Henri Lavedan; Maurice Donnay; Marcel Prévost; Henri Bergson; Mgr. Alfred Baudrillart; Henri Bordeaux; André Chevrillon; Georges Goyau (q.v.); Édouard Estaunié; Georges Lecomte; Émile Picard; Louis Bertrand; Auguste de Caumont, Duc de la Force; Paul Valéry; Abel Hermant; Émile Mâle; Louis Madelin; Maurice Paléologue; Marshal Henri Pétain; André Chaumeix; Gen. Max Weygand; Pierre Benoit; Abel Bonnard; François Mauriac; Maurice, Duc de Broglie; Léon Bérard; Marshal Louis Franchet d'Espèrey; Claude Farrère; André Bellessort; Georges Duhamel; Louis Gillet; Edmond Jaloux; Joseph de Pesquidoux; Lucien Lacaze; Mgr. Georges Grente, Bishop of Le Mans; Jacques de Lacretelle; Charles Maurras; André Maurois; and Jérôme Tharaud.

ACADEMY OF ARTS AND LETTERS, AMERICAN. A society founded in 1904 by members of the National Institute of Arts and Letters for the purpose of furthering and representing the interests of literature, painting, sculpture, architecture, and music. Its membership is limited to 50 chairs, vacancies caused by death being filled by elections from the membership of the Institute.

The membership of the Academy as of Nov. 16, 1939, consisted of the following in the order of their election: George de Forest Brush, Bliss Perry, Abbott Lawrence Lowell, Nicholas Murray Butler, Herbert Adams, Robert Grant, Hamlin Garland, Archer Milton Huntington, Newton Booth Tarkington, Charles Dana Gibson, Royal Cortissoz, Charles Downer Hazen, Wilbur L. Cross, Hermon A. MacNeil, James Earle Fraser, John Huston Finley, William Mitchell Kendall, Edwin Markham, Robert Frost, James Truslow Adams, William Lyon Phelps, Adolph Alexander Weinman, Walter Damrosch, Anna Hyatt Huntington, Paul Manship, Cecilia Beaux, Eugene O'Neill, Henry Dwight Sedgwick, Walter Lippmann, Frederick J. E. Woodbridge, M. A. de

Wolfe Howe, Frank Jewett Mather, Jr., Stewart Edward White, Deems Taylor, Charles McLean Andrews, Van Wyck Brooks, Herbert Putnam, Jonas Lie, William Adams Delano, Charles Warren, Bernard Berenson, Frederick Shepherd Converse, Chauncey Brewster Tinker, Albert Spalding, Sinclair Lewis, Willa Cather, Stephen Vincent Benét, Ellen Glasgow, and Thornton Wilder.

From November to May of each year the Permanent Museum and the Art Gallery of the Academy are open and free to the public from 10 a.m. to 5 p.m. on week days and from 2 p.m. to 5 p.m. on Sundays. In the 1939-40 season a special exhibition of the works of Childé Hassam and Edwin Austin Abbey, former members of the Academy, were being shown.

All Officers and Directors of the Academy were re-elected for 1939-40. They are: President, Nicholas Murray Butler; Chancellor and Treasurer,

Occupational deaths by industry for 1938 were as follows: Agriculture accounted for 26 per cent of all occupational deaths; trade and service, 24 per cent; construction, 17 per cent; transportation and public utilities, 12 per cent; manufacturing, 12 per cent; mining, quarrying, and wells, 9 per cent. More important, however, is the rate by work-hours and in this respect lumbering proved the most dangerous occupation with 46.38 disabling injuries per 1,000,000 man-hours. Next in order were mining, meat packing, construction, and refrigeration. Hands and fingers were involved in the greatest number of work accidents, 33 per cent, legs and feet in 24 per cent, the trunk in 19 per cent, and the arms in 11 per cent.

See AERONAUTICS; AUTOMOBILES; FIRE PROTECTION; RAILWAYS; VITAL STATISTICS.

ADDISON'S DISEASE. See MEDICINE AND SURGERY.

U.S. ACCIDENT TOLL, 1937-39¹

	Year	Total Accidents	Motor- vehicle	Home	Occupational	Public ²
Accidental deaths	1937	105,205	39,643	32,000	19,000	18,000
	1938	93,805	32,582	31,500	16,500	16,000
	1939	93,000	32,600	32,000	16,000	15,000
Non-fatal injuries	1938	8,900,000	1,150,000	4,650,000	1,350,000	1,950,000
	1939	8,800,000	1,150,000	4,700,000	1,300,000	1,750,000
	1938	330,000	90,000	140,000	60,000	50,000
Permanent disabilities	1938	320,000	90,000	140,000	60,000	40,000
	1939	320,000	90,000	140,000	60,000	40,000
	1938	3,300	1,500	600	650	400
Cost in millions (of dollars)	1938	3,300	1,500	600	650	350
	1939	3,300	1,500	600	650	350

¹ Figures provisional except for 1937 and for motor vehicle and total accidental deaths in 1938. ² Excluding motor-vehicle accidents

Wilbur L. Cross; Secretary, William Lyon Phelps; Directors: Herbert Adams, Royal Cortissoz, Charles Dana Gibson, Robert Grant, Charles Downer Hazen, Archer Milton Huntington, and William Lyon Phelps. Administrative offices are at 633 West 155th St., New York City.

ACCIDENTS. According to a preliminary report released by the National Safety Council, the total number of deaths from accidents in the United States was 93,000 in 1939, a decrease of 1 per cent from the final figure of 93,805 for 1938. This represented a cumulative decline of 15 per cent in the last three years. Deaths from burns showed the greatest increase over 1938 (8 per cent) but drownings decreased sharply. The estimated cost of all accidents, including wage loss, medical expense, and property damage, was \$3,300,000,000. The accompanying table shows recent comparative statistics.

In connection with its 1938 reports the National Safety Council revealed certain highly significant facts. It was pointed out that only two types of accidents account for more than half the accidental deaths in the country: Motor vehicles cause 34 per cent, and falls, 28 per cent. Next in importance are drowning and burns, 8 per cent each, railroad accidents, 5 per cent, firearms, 3 per cent, and poisons and poison gases, 2 per cent each. For persons under 25 the accident rate reaches a definite peak in the summer, which is not the case with persons over 25. Accident rates are higher in the West and in Florida than in other parts of the country, and the rates vary in individual States from 38.9 per 100,000 population in North Dakota to 185.8 in Nevada. For the entire population, accidents constitute the fourth most important cause of death, being exceeded only by heart disease, cancer, and pneumonia. Accidents rank second as the cause of death in males and only sixth in the case of females.

ADELPHI COLLEGE. A nonsectarian college of liberal arts for women located in Garden City, New York, incorporated in 1896. Adelphi was situated in Brooklyn, New York, until the autumn of 1929 when it moved to its present location in Garden City, where it has a campus of about 70 acres and three buildings. The enrollment for the autumn term of 1939 was 491 and for the summer session of 1939 was 108. The faculty numbered 51. The endowment was \$43,151, while the income for 1938-39 was \$196,670. The Library contained 32,804 volumes. President, Paul Dawson Eddy, A.M.

ADEN. See under ARABIA.

ADULT EDUCATION, AMERICAN ASSOCIATION FOR. A membership organization founded in 1926 for the purpose of furthering the idea of education as a continuing process throughout life. During the last decade the Association has served as a clearinghouse of information concerning adult education activities; has assisted enterprises already in operation; has helped organizations and groups to initiate activities; and has conducted or sponsored studies and demonstrations. Nearly 100 books and pamphlets on methods and practice in adult education have been published by the Association or issued under its sponsorship. The *Annual Report of the Director of the Association* is published in May of each year; the *Journal of Adult Education* (the official organ of the Association) is issued in October, January, April, and June. Support for the activities of the Association has been derived from membership fees and from grants made by the Carnegie Corporation of New York. See LIBRARY PROGRESS.

In 1936 the Association embarked on a program of studies in the social significance of adult education in the United States in order to discover the meaning and to estimate the work of adult education as a social movement among the other

social movements. The publication of volumes in this series has continued, but in 1939 the Executive Board of the Association decided that the national and international emergency following the outbreak of war in Europe called for a temporary curtailment of the study program in order to allow the Association to proceed on an enhanced scale with experimentation, demonstration, organizational promotion of adult education opportunities, and research in the preparation of materials for study at every adult level.

Studies in the social significance of adult education published in 1939 dealt with education in museums, health organizations, churches, and agricultural extension; those planned to complete the series will deal with elementary education of adults, university extramural relations, adult education councils, and training programmes for adult education teachers and leaders.

The 1939 annual meeting was held in May at Niagara Falls, Canada. The following officers were elected: Alvin Johnson, president; James E. Russell, honorary chairman; Everett Dean Martin, chairman; Alexander Meiklejohn, Charles E. Rush, Elmer Scott, John W. Studebaker, Henry M. Wriston, vice presidents; Jennie M. Flexner, secretary, and Harold Stonier, treasurer. Headquarters: 60 East 42d St., New York City. Director, Morse A. Cartwright.

ADVANCEMENT OF SCIENCE, AMERICAN ASSOCIATION FOR THE. An organization founded in 1848 to advance science, to give a stronger and more general impulse and systematic direction to scientific research, and to procure for the labors of scientific men increased facilities and wider usefulness. On Sept. 30, 1939, its membership included 20,194 co-operating individuals. As a general association of the numerous American societies for the advancement of the special sciences, it consisted of 170 autonomous and independent associated scientific societies, 32 being local academies of science.

The Association holds two meetings during the year, one in the summer, and the regular annual meeting in December. The last summer meeting was held in Milwaukee, June 19-24, 1939, with an attendance of about 900.

The next meeting, the 105th, was held in Columbus, Ohio, Dec. 27, 1939 to Jan. 2, 1940. Although the registered attendance was about 2700, it is estimated that approximately 5500 were in attendance at the various sessions. About 40 affiliated and associated organizations met with the Association, together with its 15 sections in connection with the Columbus meeting. Of the 2150 papers presented at the various sessions of the sections and societies, the prize of \$1000 for describing a noteworthy contribution to science was awarded to Dr. I. I. Rabi, of Columbia University, for a paper on "Radio Frequency Spectra of Atoms and Molecules." At this meeting, Dr. Albert B. Sabin, now with the Children's Hospital Research Foundation, Cincinnati, Ohio, read his paper on "Constitutional Barriers to Involvement of the Nervous System by Certain Viruses," for which he received the Theobald Smith Award in medical sciences consisting of a bronze medal and a prize of \$1000. See GEOLOGY.

The official organ of the Association is the weekly journal, *Science*. In addition it issues *The Scientific Monthly*, an illustrated magazine of timely articles of general interest by eminent men of science. The permanent endowment of the Association, the income from which is em-

ployed to advance scientific research, amounted on Sept. 30, 1939 to about \$254,041.

The president of the Association for 1939 was Dr. Walter B. Cannon, Harvard University. The president-elect for 1940 is Dr. Albert F. Blakeslee, Carnegie Institution of Washington, Cold Spring Harbor, N. Y. The other officers for 1940 are: General secretary, Otis W. Caldwell; treasurer, John L. Wirt; permanent secretary, F. R. Moulton. Headquarters are in the Smithsonian Institution Building, Washington, D. C.

ADVENTISTS. In America the Advent Movement owed its origin to William Miller (1782-1849), who taught that Christ was coming in person and that the date might be fixed with some definiteness. According to the Year Book of American Churches, there are four Adventist Bodies, which had a combined membership of 187,100 in 1938. The largest denomination is that of the Seventh Day Adventists, who believe that Saturday is the Sabbath established by God's law. Headquarters, Takoma Park, Washington, D. C. See RELIGIOUS ORGANIZATIONS.

ADVERTISING. When a business man decides to expand his advertising there is always an interval of preparation before the advertisements appear. So although the year 1939 was a good year for Advertising, its increases as usual followed by several months the rising temperatures of general business as they were shown in the statistical thermometers. Much of the optimism shown in business statistics in the last four months of 1939 will find truer reflections in the volume increases of 1940 advertising.

Slight rises in volume were shown in magazines and in newspapers. Outdoor advertising just about held its own, while farm papers showed a small loss. Radio was the only medium which enjoyed a substantial gain, estimated at as much as 17 per cent.

Interest in the European situation sent the sales of receiving sets to an all-time high of 9,100,000 in 1939. Nearly a million of these were the new portable sets fitted with batteries. This was also the first year of the so-called micro-midget receivers—small enough to hold in the palm of the hand. Well over a million receiving sets for automobiles were sold, so that now one out of five cars on the road is radio-equipped.

There were no great discoveries of new personalities on the air in the past year. "Idea programs" continued to flourish, especially variations on the quiz theme. The only new factor was a radio application of the national craze for bank-night. An ingenious use of telephone numbers brought huge audiences to their receiving sets in all parts of the country to hear which lucky individual among millions of listeners would get a random cash award.

Women's clubs met to condemn horror-shows and to eulogize the sponsors of classical music. A few hundreds of thousands quietly appreciated the bountiful fare of excellent musical and dramatic free entertainment which makes the American system of broadcasting, for all of its vulgarities, the most sumptuous in the world.

Advertising and the Consumer have been doing business together quite happily for several generations, but the year 1939 found the Consumer discovering Advertising anew and Advertising discovering the Consumer. Each looked at the other with new and appraising eyes. On the whole the experience has been wholesome for both.

So much for the statistical record. But advertising is more than facts and figures. It is a shifting parade of personalities, ideas, issues, and conflicts of opinions. For instance:

The year 1939 was only a few days old when Kenneth Collins resigned from the vice-presidency of Gimbel Brothers to become assistant to the publisher of the *New York Times*, when President Lohr of the National Broadcasting Co. announced his opposition to liquor advertising on the air, when the late Heywood Broun called a strike of his American Newspaper Guild on two Hearst newspapers.

Ken, the unfortunate offspring of the publishing wizards who had astonished the advertising world with *Esquire* and *Coronet*, made its last struggle for public favor by changing its style of format and content before it finally disappeared completely.

As the year progressed business men engaged in the food and drug fields journeyed to Washington to begin a long series of conferences looking toward the revision of labeling regulations. William J. Wardall, as trustee for the McKesson & Robbins situation, patiently continued his efforts to straighten out the post-Musica confusion.

The Harvard Bureau of Business Research studied 42 food co-operatives, 47 general store co-operatives, 160 farmer co-operatives dealing mostly in farm supplies and petroleum products, and decided that any advantage over comparable private enterprises lay mostly in their distribution of retail profits, in scrupulous labeling, in benevolent pricing, but not in greater operating efficiency.

The soft drink industry was suddenly discovered by Wall Street, mostly because two growing competitors of the national leader in the cola field produced unusual records of earnings.

Researcher Daniel Starch, whose minions carry magazines to sample groups of readers to ask them what they have seen and what they have read, altered his methods for greater accuracy.

Scribner's Magazine, one of the landmarks of publishing, quietly found the struggle too difficult and in its fifty-third year suspended. The Crowell Publishing Company produced a series of remarkable advertisements in which the heads of conspicuous companies were photographed with inquiring consumers. The series was noteworthy not only because it frankly raised questions occurring to consumers about advertising, but because executives like William Knudsen of General Motors, Clarence Francis of General Foods, and Gerard Swope of General Electric were photographed and quoted directly in explaining the fundamentals of Advertising.

The newspapers of the country, disturbed by the progress of other media, co-ordinated their efforts to renew an appreciation of newspapers as a basic advertising medium. Astonished by the growth of cans as containers for beverages, the glass people brought out a thinner, lighter, no-deposit bottle.

A group of consumers appeared before the Temporary National Economic Committee to ask that Advertising have less glitter and more facts, and that sales clerks know more about what they were selling.

In Rochester a stamp plan under the Department of Agriculture found success in moving merchandise to relief householders without disturbing the channels of regular business. More publications intended to guide the consumer in purchasing came into existence without substan-

tial proof of their reliability, Mrs. Franklin D. Roosevelt was photographed in a plane to encourage the timid to fly, and the chain stores and Wright Patman continued to make news.

The Federal Trade Commission and *Good Housekeeping Magazine* locked horns in the first of a series of hearings which developed into an acrimonious conflict. The approval of the Good Housekeeping Institute met with questioning, and the magazine's top man, Richard E. Berlin, replied with outraged charges of subversive influences.

Dupont put on the market its first trial of Nylon-made stockings and 4000 pairs were sold in the first day. *Look's* eye camera, developed by Dr. Herman F. Brandt of Drake University, produced its first results showing that pictures of greater mass have greater attraction power, higher visibility, and greater interest retention power. Advertisers pondered the significance of learning for the first time what actually occurs when a reader opens a publication.

Ted Patrick, famed for his World Peaceways advertisements, turned his guns on propaganda for neutrality. RCA continued its explorations of television and discovered that its technicalities could be mastered far more easily than its economic implications.

Charlie McCarthy announced his intention of dropping from a full hour to a half hour for Chase & Sanborn, and the radio world was shaken with news of a new network with Elliott Roosevelt's name prominently coupled with various large advertisers—but nothing came of it.

Three hundred and forty-two advertisers, according to *Printers' Ink*, invested more than \$100,000 each during 1939 in magazines, farm publications, and radio combined. Procter & Gamble, General Foods, General Motors, Sterling Products, Lever Brothers, Colgate Palmolive-Peet, American Tobacco Co., Campbell Soup Co., Chrysler, Liggett & Myers, R. J. Reynolds, and Standard Brands stood at the top of the list. See also CO-OPERATIVES, and MARKETING; FASHION.

ROY S. DURSTINE.

AEGEAN (è-jě'an) ISLANDS, ITALIAN.

The islands in the Aegean sea, near Turkey in Asia, belonging to Italy. They comprise (Italian names in parentheses) Rhodes (Rodi), Castellorosso (Castellorizo), and the Dodecanese group—Astypalaea (Stampalia), Casos (Caso), Cos (Coo), Kalymnos (Calino), Karchi (Calchi), Karpachos (Scarpanto), Leros (Lero), Lipso (Lisso), Nisyros (Nisiro), Patmos (Patmo), Symi (Simi), Tilos (Piscopi). Total area, 1035 square miles; total population (1936), 140,848 (natives, 85 per cent; Italians, 12 per cent). Chief towns: Rhodes (capital), 27,466 inhabitants (1936); Kalymnos (Calino), 15,247. Education (1937-38): 12,569 pupils in elementary schools and 865 pupils in secondary schools.

The chief agricultural products consist of grapes, olives, tobacco, oranges, and vegetables. Oriental carpets, wine, olive oil, pottery, and tiles are manufactured. Sponge fishing is an important industry. Livestock (1937): 90,695 goats, 66,546 sheep, 8978 horses, asses, and mules, 6519 oxen, and 3934 pigs. In 1937, imports were valued at 122,374,000 lire; exports, 19,705,000 lire (lira averaged \$0.0526 for 1937 and 1938). Budget (1934-35): 48,000,000 lire including a state contribution of 3,000,000 lire (lira averaged \$0.0825 for 1935). There were, in 1938, 391 miles of highways. The

Italian navy has a station at Rhodes and a base at Leros. A governor, who is subject to the Italian Foreign Office in Rome, heads the administration. Governor, Count de Vecchi.

AERIAL PHOTOGRAPHY. See PHOTOGRAPHY, GEOLOGICAL SURVEY.

AERONAUTICS. Individual Exploits. In a year in which military and transport flying played the major role, the several good-will flights and attempts at new records were of a secondary importance in stimulating aeronautical progress.

Completing the largest mission to South America in the last decade, seven Army Air Corps Boeing B-17 Flying Fortresses arrived in the United States on November 26. Celebrating the 50th Anniversary of the Republic of Brazil, the flight was headed by Maj. Gen. Delos C. Emons, GHQ Air Force commanding general; 29 officers, and 28 enlisted men participated. The 12,000 miles were flown at an average speed of a little over 200 miles per hour.

In reciprocation for a good-will flight to Mexico City made by Capt. E. V. Rickenbacker, Francisco Sarabia on May 24 set a new time record for the 2350 miles from Mexico City to Floyd Bennett Field, N. Y. Flying a *Gee Bee* special, Sarabia covered the distance in 10 hours, 47 minutes, breaking the previous record set by the late Amelia Earhart on May 8, 1935, of 14 hours, 19 minutes. Beginning his return flight Sarabia was killed on June 7 when his plane crashed at Washington, D. C.

Both Russia and Japan inaugurated good-will flights during the year. The Russian flight from Moscow to New York ended 700 miles short of New York, on Miscou Island, New Brunswick, when Brig. Gen. Vladimir Kokkinaki and Maj. Mikhail Gordienko were forced down on April 28. In their plane, the *Moscow*, a 1936 model with two 1000 h.p. engines, the Russian airmen left Shcholkovo Airdrome on April 27. The flight was terminated, according to Brig. Gen. Kokkinaki, because of the lack of reliable weather information between New York and the coast of Labrador.

The Japanese plane *Nippon*, a twin-motor transport monoplane built by the Mitsubishi Heavy Industry Corporation, left Tokyo on August 28. Carrying six aviators and a journalist, the *Nippon* landed in Seattle on August 31. From here it went to Los Angeles, and then to New York, arriving there on September 9. The 34,000-mile flight ended October 20 when flight commander Sumitoshi Nakao set the *Nippon* down in Tokyo, completing what was said to be the most spectacular feat in Japanese aviation history.

During the year the Army Air Corps broke six international records. The first of the new records was set by a Boeing B-15 "Super Flying Fortress" when it averaged 166.32 m.p.h. while carrying 2000 kilograms (4409 lb.) payload for a distance of 3107 miles, or 5000 kilometers. No other plane in the world had formerly qualified in this category.

A high altitude record of 33,400 ft. with 5000 kilograms (11,023 lb.) payload was made in a Boeing YB-17A "Flying Fortress." The former record with similar load was held by Germany with a mark of 30,551 ft. in a Junkers JU-90. The same kind of ship was used to establish the speed record of 259.398 m.p.h., carrying a 5000 kilogram payload over a 1000 kilometer course.

The former record of 251.878 m.p.h. was held by Italy.

A fourth record set by the Army Air Corps was the high altitude record of 8200 ft. with greatest payload (31,205 lb.). This record was set in a Boeing B-15. The former mark was 6561 ft. with 28,660 lb. carried by a Russian *Maxim Gorky*.

The Los Angeles-New York course record of 9 hrs. 14 min. 30 sec. was set by the Army Air Corps with a Boeing B-17B. The former record (for planes carrying passengers or crew) was held by D. W. Tomlinson when he flew a Douglas DC-1 over the course in 11 hr. 5 min. 45 sec.

The last of the six new records set by the Army Air Corps was an amphibian speed record of 186.094 for a 1000 kilometer course, in a Wasp-powered Grumman OA-9. The former mark of 159.8 m.p.h. was held by Italy.

A speed record of great interest was set by Lieut. Tray Keith of Barksdale Field, Shreveport. On February 6 he dove from 28,000 ft. more than 3½ miles in a Curtis-Wright P-36A pursuit at an estimated speed of more than 11 miles a minute. Keith recovered at 9000 ft., landed with a buckled wing, and a speed indicator that had become stuck at 500 m.p.h. Army officers estimated the average speed at 670 m.p.h.

The 12th National Air Races held September 2-4 saw Frank Fuller fly his Seversky pursuit 2450 miles from Burbank to Bendix via Cleveland in an elapsed time of 8 hr. 58 min. 8.46 sec., an average speed of 273.14 m.p.h. This broke the record of 9 hr. 25 min. Fuller had set in 1937. Fuller is the only man who has won the Bendix Trophy twice. For a third time Roscoe Turner won the Thompson Race, but was unable to come up to his last year's, still standing, record of 283.419 m.p.h. Art Chester won the Greve race at an average speed of 263.39 m.p.h.

Miss Jacqueline Cochran kept the feminine half of aviation in the running by piloting her Beechcraft to 33,000 ft., breaking the women's altitude record for craft of 985 cu. in. displacement. The Women's National Aeronautic Association voted Miss Cochran the outstanding woman pilot of the year, for the second year in succession.

Abroad new records were claimed early in the year by Germany. On April 27 pilot Fritz Wendel flew a Mercedes Benz-powered *Messerschmidt* over 2 kilometers at an average speed of 55.11 km/hr. or 468.92 m.p.h. In a flight the record of which is much disputed by foreign aviation experts, Capt. Hans Dieterle claimed an average speed of 463.943 m.p.h. on a 3-kilometer regulation course. This record was made on March 30 at Oraienburg, near Berlin, in a Heinkel machine. The Heinkel's speed was 60 per cent of the speed of sound at sea level.

A new non-stop flight record between Paris and Algiers was set in May when a Lockheed 14 operated by Air Afrique and piloted by Lockheed's chief test pilot, Marshall Headle, flew the 908 mi. in 3 hr. 55 min.

Alex Henshaw knocked 31 hours off the mark for round trip flights between England and Cape Town, when he completed the trip in 4 days and 10 hr. 43 min. The old record set by A. E. Clouston and Mrs. Betty Kirby-Green was beaten by 1 day, 7 hr., 13 min.

Two records of very contemporary interest were set early in the year. Alexander Seversky set a record for the Copenhagen-London flight, a distance of 650 miles, when he flew the trip in 2

hr. 25 min. on April 9 in a convoy fighter of his own design. J. K. Quill flew his "Spitfire" low-wing monoplane powered with a Rolls Royce Merlin 990/1040 h.p. engine over the Paris-London course of 205 miles in 41 minutes, an average speed of 300 m.p.h.

At home several new records for small aircraft were set during the year. On April 22, Dewey Eldred flew a Taylorcraft monoplane 1242 miles from Willoughby, Ohio, to Fire Island in 16 hr. and 58 min., an average speed of 73 m.p.h. This record for light seaplanes was broken on October 12 when Henry Chapman flew non-stop and non-refuelling from New York to New Orleans in an Aeronca powered with a 65 h.p. Continental engine and equipped with floats. Chapman covered the 1186 miles in 13 hr., 35 min., setting the latest record average speed for light seaplanes at 88 m.p.h.

On October 23 Kelvin Baxter and Robert McDaniels landed at Muncie, Ind., in a Piper Cub, powered by a 55-h.p. Franklin engine, after establishing a new world light landplane endurance record of 535 hr., 45 min.

An all-class endurance record was set on October 29 when Wes Carroll and Clyde Schlieper landed their Piper Cub seaplane powered by a 50 h.p. Continental engine, after remaining aloft over Rosamond Dry Lake, Calif., for 726 hr.

Private-Owner Aviation. While war, or the threat thereof, almost eliminated the individual non-military aviator from the skies of Europe, participation in aviation by individual Americans broke all previous records. At the beginning of 1939 there were in the United States a total of 22,983. On Jan. 1, 1940, there were 31,264. At the beginning of the year, the number of planes certificated for civilian use was exactly 10,000. At the end of the year there were 12,829. During the first nine months of 1939, 2698 planes were turned out of American factories for domestic civil use, compared with only 1313 produced during the corresponding period of 1938. The total production of such planes for 1939 was estimated at the year's end at approximately 4000, compared with only 1823 in the previous year.

As in domestic transport a part of this progress can be attributed to an improvement in general business conditions. Most of it, however, is attributable to the rapidly increasing vogue of small two-seated monoplanes of the so-called "flivver" plane class which are available at prices as low as \$1095 and which in typical American fashion can be purchased for a down payment of approximately a third of that sum. The wide-spread adoption of this type of plane in commercial flying schools has been steadily decreasing the cost of flight instruction. Its low costs of operation and maintenance have made it a practical possession for large numbers of people heretofore unable to afford aircraft ownership and its generally satisfactory flying characteristics recommend it to the private pilot who wishes to participate in flying activity without undue hazard. Almost the entire gain in civilian aircraft production registered in 1939 over the production of 1938 was accounted for by the increased production of this type of plane.

It is important to realize that almost all of the above figures represent a naturally increased acceptance of private flying by the American public. To this rate of growth was added during 1939 a remarkable stimulus in the shape of a plan to extend Government assistance into the field of

civilian flight training. Known as the Civilian Pilot Training Program, the plan provides for the training of 10,000 young Americans almost entirely at Government expense by the summer of 1940. Administered by the Civil Aeronautics Authority the plan was installed on an experimental basis at 13 American universities during the spring of 1939. Of 330 students accepted for training some 317 were put through a carefully worked out course of ground and flying instruction and qualified for private pilot certificates. Following the success of this experimental phase, Congress passed a Civilian Pilot Training Act authorizing the operation of such a program on a nation-wide scale for five years, and appropriated \$4,000,000 for an initial full-scale year. By the end of 1939, 9310 college students in 437 colleges and universities had been enrolled and had begun ground and flight training. To be accepted for the instructions applicants had to be between 18 and 25 years of age, pass a rigid physical examination and possess American citizenship. Instruction given them consisted of a ground course of 72 hours of lectures, generally at the participating university, and of from 35 to 50 hours of actual flying given at some nearby commercial flying school. Four of the colleges were exclusively for women, and authorities of co-educational schools participating in the program were permitted to admit girls to fill up to 10 per cent of their quotas. Five colleges in this program were devoted exclusively to the education of members of the colored race. Outside the limits of the college training some 700 scholarships were being offered to the best graduates of ground schools organized in 70 communities throughout the nation.

Organizers of the program had every reason to expect that such an annual addition of at least 10,000 new pilots to the country's airmen over and above the natural rate of pilot increase would have tremendous results in bringing about the beginning of a really widespread use of aircraft by the individual.

Airports. With the rapid increases registered in all types of flying through the year, questions of airport size, maintenance, operation, and finance became even more important than in former years. The Civil Aeronautics Act of 1938 had specifically requested the Civil Aeronautics Authority to make a survey of the airport situation throughout the United States and to submit its findings and recommendations to Congress. On Mar. 23, 1939, the Authority therefore submitted an extensive report. Recognizing that the "development and maintenance of an adequate system of airports and seaplane bases should be recognized in principle as a matter of national concern," the Authority found that such a system should be regarded, under certain conditions, as a proper object of Federal expenditure. Specifically, it found that during periods when the Federal government was expending large sums on work relief projects the highest preference might well be accorded to those related to the construction or improvement of airports. When such relief funds should be seriously curtailed, the report advised that the Federal government should make specific appropriations for airport projects, giving preference in its allocation of such funds to states which had developed well organized airport development plans of their own and which had taken legislative steps to protect its airports with proper zoning statutes. The authors of the report developed three possible scales of expenditure for the consideration of

Congress. The first involved the expenditure of \$128,000,000 to bring to a "properly high standard of quality" the airports already designated as airmail stops. The report pointed out that although 236 cities had been designated as airmail stops, only 179 were actually receiving service, since many of them were unsafe for use by modern air transport planes. To extend adequate airport development to a total of some 860 airports, which the report found would provide for a considerable expansion of the air transport system and for many of the needs of private flying and pilot training, the report offered a program costing about \$230,000,000. A third choice for Congressional consideration offered a completely adequate airport development program for about 3500 airports, as compared to 2174 existing airports and intermediate fields, at an estimated cost of \$435,000,000.

Identical bills were introduced in the two houses of Congress to make appropriations for the smallest program of the three, but did not reach even Committee hearings during the year. Meanwhile, with some action possible during 1940 in view of the War Department's interest in the program, numerous municipal officials throughout the country took the stand that the Federal government should provide not only for the construction and improvement of American airports but should also bear a heavy share of airport maintenance and operating cost, items which the Authority's report had specifically exempted as proper objects for Federal expenditure.

As in preceding years the WPA expended large sums on airport projects, approximately \$40,000,000 of Federal relief funds being devoted to the enlargement and improvement of some 307 airports throughout the year. Local sponsorship and participation increased total expenditures on these projects to approximately \$62,000,000.

The nation's principal air traffic centers continued progress in size, hangar facilities, and the provision of adequate buildings for the use of the traveling public and airline employees. Most outstanding airport dedication during the year was that of La Guardia Field at North Beach in the Borough of Queens, New York City. Involving the movement of a prodigious amount of filling material and the construction of seven huge hangars and two elaborate passenger terminals, the field as dedicated on October 15 represented the investment of some \$40,000,000 of Federal relief and city funds. On November 7 the field, which offers one runway 6000 feet in length and three others longer than 3500 feet each, as well as facilities for trans-oceanic flying boats, was designated by the Civil Aeronautics Authority as a co-terminal with Newark Airport for the New York Metropolitan district. Within a few weeks of the opening of operations upon it by United Air Lines, American Airlines, and TWA, all of whom had contracted for hangar space, the transport experts were already seeing a date in the not too distant future when the field would no longer be completely adequate to handle all its traffic.

Progress on the national airport at Washington inaugurated in the fall of 1938 continued at high speed, and by the year's end U.S. Army engineers co-operating with WPA and Civil Aeronautics Authority personnel on the project were able to announce that construction work was two and a half months ahead of schedule and that the field seemed almost certain to be ready for use in July, 1940.

In Chicago completion of an extensive WPA project almost doubled the landing area of that important and extremely busy air terminal but up to the end of the year the new runways were still unused, due to the fact that a railroad still bisected the new and old portions of the field. Elimination of that obstacle was expected during 1940 through condemnation proceedings. In Los Angeles a successful drive for a municipal bond issue insured progress in the near future toward a unified air terminal at the municipal field.

Airplane Design. Throughout all the world aeronautical research laboratories and airplane design offices laid unprecedented emphasis upon the solution of problems connected with military aircraft. Top speeds of military fighters, which had reached perhaps 320 miles an hour in crack pursuit squadrons, were no longer considered satisfactory. Instead prototypes whose speeds approximated 400 m.p.h. were tested in several countries. In this country the Lockheed Aircraft Co. produces such a plane in the shape of a twin-engined single seater equipped with a three-wheel landing-gear. The Bell Aircraft Co. turned out another three-wheeled single seater whose single engine was mounted behind the pilot and drove the propeller to a long transmission shaft. In the field of bigger planes stress was laid upon the medium range, high speed, heavily armed bomber, of which each nation turned out several types. Best performances in this class probably matched the 320 miles an hour common to single seater types of 1938 manufacturers. Much of the increase in speed was made possible through the availability of new engines of unprecedented horse power. At the year's end the United States alone was turning out one engine type of approximately 2200 h.p. output. Another rated at 2000 h.p., and a third specially designed for work at high altitudes of some 1800 h.p. A year previously the largest available engines were in the neighborhood of 1500 h.p. and there were comparatively few of these yet in service. Other factors contributing to increased performance were the almost universal elimination of exposed rivet heads by the use of flush riveting, and the refinement of aerodynamic shapes along lines indicated by the research in new extra high speed wind tunnels. At the year's end aerodynamic experts in touch with these wind tunnels were talking confidently of airplanes capable of 500 miles an hour speeds.

Domestic Transport. Within the United States the Nation's 17 scheduled airline operators enjoyed what was by far the best year in their history. During the 12 months of 1939 these carriers flew 81,700,000 miles, an increase over 1938 of 17 per cent. They carried approximately 1,900,000 passengers, an increase of 43 per cent for the year. These passengers flew altogether 738,000,000 passenger miles, an increase of 39.5 per cent over domestic air travel in 1938. Air express traffic and airmail cargoes continued their steady increase during the year to new record figures, express increasing by 28 per cent over 1938, air mail by 15 per cent. These accomplishments, coupled with readjustments of the airmail rates for some of the lines, enabled the industry as a whole to make a net profit for the year, the first time such a thing had been accomplished in its history.

Many things contributed to this prosperity. Business conditions generally were better throughout the country than they were in 1938. Practically without exception the traffic departments of

the individual airlines reached new levels of effectiveness. Toward the end of the year the industry as a whole launched its first unified advertising campaign along lines pioneered by the railroad industry. But undoubtedly the largest single factor in bringing about this new acceptance of air transportation by the American public was the new level of safety which these carriers achieved in their operations. During the entire 12 months there occurred only two fatal accidents. In the two together only nine passengers were killed. This established for the year a safety index of 82,000,000 million passenger miles per passenger fatality. The best previous record in airline history had been set in 1938 when the index stood at 22,000,000 passenger miles per passenger fatality. Making the record even more dramatic, the second of the two accidents occurred on March 26, leaving the final nine months and five days of the year completely free of trouble.

The factors which contributed in turn to this safety record were also numerous. Practically all the airlines involved were flying equipment to which their pilots had had several years to become accustomed. The Federal airway system of radio and other aids to air navigation was brought to a new level of effectiveness and was considerably extended along air routes which previously had had but few ground facilities. The airlines themselves had voluntarily agreed in the fall of 1938 to refrain from competitive practices which sometimes led to the dispatching of planes in unfavorable weather to gain an advantage over some rival on the same or along a parallel route. But undoubtedly a large share must be given to the passage during the summer of 1938 of the Civil Aeronautics Act. Guaranteed for the first time through the provisions of this Act of a stable future, a freedom from unrestricted competition and an ample income for financial stability, the air carriers were able to make long range plans and formulate conservative operation policies which included the purchase of much new equipment, new expenditures for maintenance, and the promotion of a high morale throughout their personnel.

Outside the field of operations in traffic, the domestic air transport year was likewise featured by the establishment of working relations with the new Civil Aeronautics Authority. By the fall of 1939 that Authority had issued certificates of public convenience and necessity to all 17 of the established domestic operators and had readjusted airmail rates for some eight of them. Since the airlines which first filed petitions for hearings on airmail rates were naturally those most in need of financial assistance, the new rates fixed in these cases were almost universally favorable to the petitioning airline, although the Authority served notice toward the end of the year that it considered its duty to include the study of airmail rates with a view toward the decrease of Federal payments for such service should the growth of non-mail revenue reach a point which seemed to warrant reductions. To this end it instigated upon its own initiative hearings into the airmail rates paid to all carriers which had not up to that time themselves asked for hearings.

A number of new companies seeking certificates to open new routes were organized during the year and a number of established carriers likewise requested permission to extend their operations. By the end of the year there were no less than 67 such petitions before the Authority. Although

hearings had been held on a number of these applications none had been decided as of December 31.

The requirements of rapidly increasing traffic resulted during the second half of the year in a flood of orders for new aircraft. In November the Air Transport Association announced that \$25,000,000 worth of equipment had been ordered by its members from American manufacturers for early delivery. The great majority of these orders called for 21-passenger all-metal monoplanes of the Douglas DC-3 type which had been in service on most of the important trunk routes of the country for the past two seasons. Many of the new planes were destined for the establishment of new schedules on those routes. Many also were called for by airlines operating routes of secondary importance whose traffic had formerly justified only smaller aircraft. During the year the big four-engined land plane, which had been developed for United Air Lines and four other companies associated in a development contract with the Douglas company, was given an extensive service testing on United's routes in the course of which it was demonstrated at many large American cities. The original model was later sold to Japan, but at the year's end both United Airlines and American Airlines had placed orders for fleets of ten of these four-engined planes. While the ships actually ordered were to be somewhat smaller than the original development model, they insured that these two airlines would definitely undertake four-engine high-level operations on their transcontinental services by 1941. Meanwhile Trans-Continental and Western Air, the third big operator between the East and West, had apparently stolen a march on its competitors by ordering four four-engined land planes of the "Stratoliner" type from the Boeing Co. of Seattle for delivery during the spring and summer of 1940. Undoubtedly, planes of this type would have been in service even earlier save that the first of them to be tested crashed during tests in March. Thereafter tests were renewed on an extraordinarily thorough basis and the ship subjected to a number of modifications to eliminate any possibility of the recurrence of such an accident.

The domestic airline industry at the end of 1939 employed 9445 people, and had in service some 254 transport airplanes.

World Air Transport. In a year in which military aviation loomed so large in world affairs, it was easy to gather the impression that the great stimulation which occurred during 1939 in the progress of aviation was entirely attributable to military developments. Such, especially in the United States, was far from being the case. In fact, to the expert, the limited activity of military aircraft in European warfare up to Jan. 1, 1940, seemed far less important as events in aviation history than the spectacular gains registered during 1939 in the fields of air transportation and private-owner flying.

Viewed from a world perspective, the outstanding achievement in air transportation during the year was the final consummation of plans formed during the preceding decade for the establishment of scheduled airplane service across the North Atlantic. The year opened with the situation regarding the granting of reciprocal operating privileges by the United States and Great Britain to each other's airlines still in a deadlock.

By terms of a long-standing inter-company agreement Pan American Airways and the Imperial



Courtesy of Pan American Airways

PASSENGERS DISEMBARKING FROM THE *AMERICAN CLIPPER* ON ITS SCHEDULED ARRIVAL AT LISBON

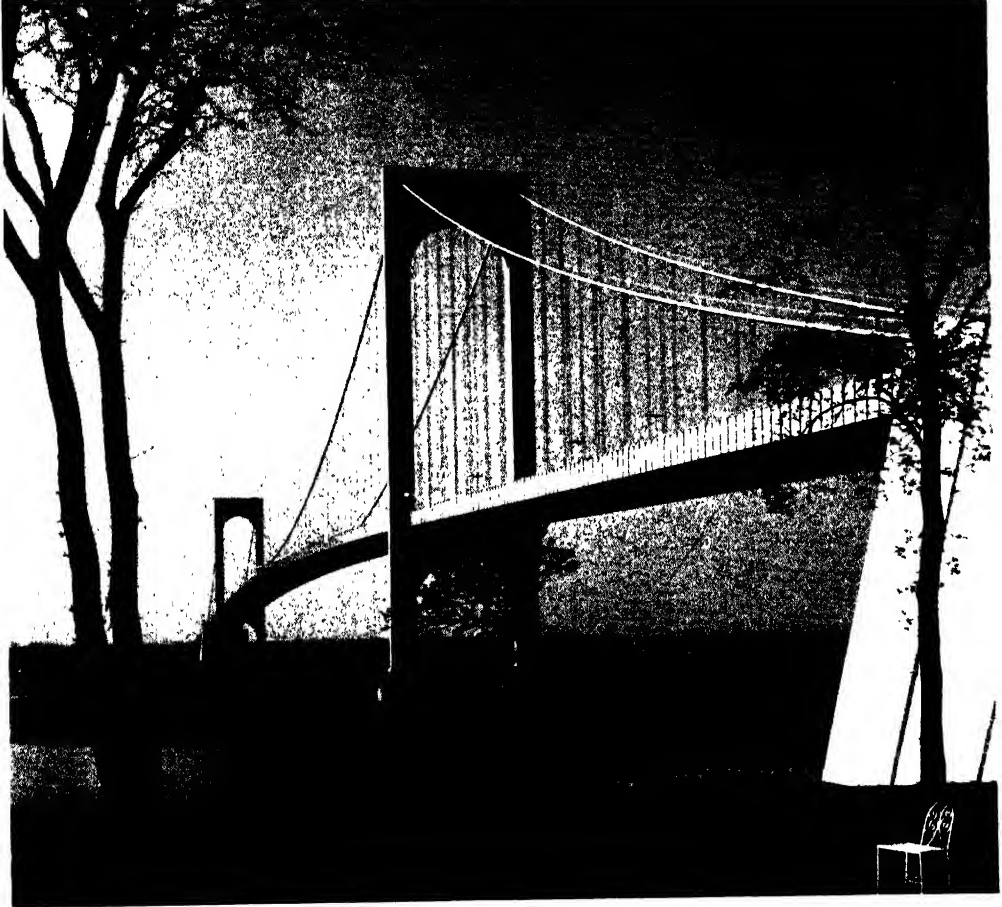


Courtesy U.S. Army Air Corps and International News Photos, New York

NIGHT PHOTOGRAPH OF AIRPLANE IN FLIGHT MADE FROM ANOTHER PLANE

Made with photoflash bulb and speedgun synchronized with shutter. Photograph by Private L. W. Bland from a plane piloted by Lieut. H. O'Daniel. Lieut. L. R. Hughes is clearly shown in photograph

AERONAUTICS



Courtesy of The Triborough Bridge Authority

THE BRONX-WHITESTONE BRIDGE

This bridge connecting the Borough of the Bronx with the Borough of Queens, New York City, was opened April 29, 1939



Courtesy of the Washington Toll Bridge Authority

LAKE WASHINGTON BRIDGE

A pontoon bridge at Seattle, Washington, built of reinforced concrete. Each cell is 59 feet wide and from 117 to 378 feet long, with walls 8 inches thick

BRIDGES

Airways of Great Britain had agreed that neither would start operations between the United States and England until both were ready to do so. In the early weeks of 1939 Pan American received delivery of the first of its big 81,000 lb. Boeing-built Clippers and indicated that it was ready and willing to begin service. Imperial Airways, however, hampered for the past several years in securing new aircraft by the concentration of British aircraft factories on military orders, had no planes ready which were capable of carrying commercial loads on a trans-Atlantic assignment.

Then France, whose company Air-France Trans-Atlantique also wished a share of the trans-Atlantic service, came forward with an offer to let Pan American use a base at Marseilles. Since Pan American already held permission from Portugal for the use of the Azores, this made possible the establishment of an American air service without reference to the British authorities. In any case the announcement of arrangements with France was soon followed by word from England that Imperial Airways would have no objection to Pan American's establishment of service even on routes using British territory.

With landing rights thus assured, Pan American Airways pressed its application for a route certificate which was already before the Civil Aeronautics Authority for decision. On May 19 the certificate was granted and the next day (dramatically important as the 12th anniversary of Charles A. Lindbergh's flight to Paris) Pan American Airways dispatched the *Yankee Clipper* to Marseilles, via Horta and Lisbon, with the first cargo of mail ever carried across the Atlantic by scheduled airplane service. By the end of June inaugural flights with mail had been made over the Northern route via Botwood, Newfoundland, and Foynes, Ireland, to Southampton, England, and soon thereafter both services were opened to passenger traffic.

The opening of hostilities in Western Europe necessarily affected schedules, but the airline continued to operate its planes by concentrating all its operations on the so-called Southern route and terminating its flights at Lisbon, Portugal, thus avoiding actual entrance into the zone of hostilities. Late in December the service completed its hundredth crossing. On those crossings no less than 1786 passengers and some 81,015 lb. of mail had been carried.

Both France and England also opened mail service during the year across the North Atlantic. In May Air-France sent its big flying boat *Lieutenant de Vaisseau Paris*, which had been used in 1938 for survey flights, on a final experimental round-trip crossing. On July 15 it completed another passage, this time carrying a small amount of mail. The British in August began operation of an airmail service using short Empire boats which were to take off only partially loaded with fuel, then have their fueling completed from big land planes especially fitted with tanks and long fuel lines for the purpose. The first crossing, that by the flying boat *Caribou*, was a substantial success, but both British and French crossings were suspended just prior to the outbreak of the war and had not been resumed at the end of the year.

The year's trans-Atlantic developments also included a strong bid by a second American firm, American Export Airlines, for a share in the operations. During the summer it carried out several round-trip survey flights in a twin-engined Consolidated flying-boat similar to those used by

the U.S. Navy as scout bombers. At the year's end that airline was busy submitting evidence to the Civil Aeronautics Authority to prove that it should be permitted to establish a service via Spain to Rome for the duration of the war and thereafter be permitted to share Pan American's routes to England and France. No decision was expected, however, until some time in the early spring of 1940, and even if its petition is allowed it seemed unlikely that American Export could have adequate equipment ready for mail and passenger service before 1941.

Elsewhere throughout the world international air transport was more affected by the outbreak of hostilities than by any other factor. Imperial Airways, badly in need of equipment due to the press of military orders in the British factories, had in fact shown signs that it could not maintain its full services to Africa, Asia, and Australia even before September.

Services throughout Europe were badly disarranged, but by the year's end showed an astonishing number of lines restored to operation. The German Lufthansa continued operations between Berlin and Bucharest by way of Vienna and Budapest and to Rome by way of Venice. It likewise was operating some of its purely internal lines and was maintaining connections with Denmark, Norway, and Sweden. The Dutch airline K.L.M. maintained connections with London and Scandinavia. British, French, and Dutch maintained services to Africa, India, Asia, and Australia, but terminated service in Europe at Rome rather than in the capitals of other countries. Throughout the Mediterranean and Balkan area services by Spanish, French, Italian, and other airlines was practically on a normal peacetime basis.

Across the South Atlantic both French and German lines suspended, but the French soon resumed on a regular weekly schedule. At the year's end it was in fact joined by a new Italian service attempting to establish itself along the southeast coast of South America, and K.L.M. announced that it would open a service to Dutch Guiana across the South Atlantic some time early in 1940.

Pan American Airways greatly improved its service across the Pacific by reinforcing its Martin-built *Clippers* with two of the Boeing-built type and surveyed the route between California and New Zealand in one of the latter ships as a move toward securing a route certificate from the Civil Aeronautics Authority. Both in the Pacific and on its extensive routes in Latin America Pan American Airways registered traffic gains of almost 100 per cent over 1938, large gains being recorded after hostilities broke out in Europe and shipping activities decreased throughout the world.

Military Aviation. The year 1939 in military aviation was featured less by what was proven than by the number of unanswered questions which at the year's end still surrounded the potentialities of the modern airplane in warfare.

In the theaters of active warfare in China, Poland, and Finland the airplane did play an active and important part in developments. In the Far East Japan continued to demonstrate that airplane squadrons operating with little effective opposition are of great value in harassing railroads and other lines of communication, and in bringing warfare and destruction to enemy headquarters no matter how far into the interior they may be withdrawn. In Poland, German airmen, conducting continuous and devastating raids against almost every important town and com-

munication line, contributed tremendously to the success of Hitler's *blitzkrieg* campaign but here, too, aerial opposition was almost non-existent. In Finland, although Russian bombing squadrons wreaked heavy damage on Helsinki and other Finnish towns, the opposition of a small but effective air service and apparently efficient anti-aircraft artillery kept the numerical strength of the Russian force from playing a controlling part in the contest.

Such general conclusions as can be drawn on these developments are, however, not particularly new. It has been fully demonstrated in the Spanish war, for example, that an air force possessing clear superiority in the air can be extremely effective—in fact almost decisive—when used in connection with ground troops operating in open warfare. From Spain, from previous campaigns in China, and in fact from considerable experience in the World War of 1914-18 the limited bombing of important enemy cities had been proven to be highly destructive of property but unsuccessful as a means of destroying enemy morale. In fact until civilian populations are already despairing the success of their cause it seemed evident that such bombings produced a clear-cut effect in the opposite direction, actually seeming to arouse a determination to win against a heartless enemy at any price.

Perhaps the realization of this factor had much to do with the noteworthy failure of both Germany and the Allied powers to bomb each other's cities during the first four months of the conflict in Western Europe. Perhaps each side realized it would face the most desperate sort of resistance from defending plane squadrons and anti-aircraft batteries if it undertook massed bombing raids. Whatever the reasoning, it was true that the raids carried out by German airmen over Great Britain and France and by the Allies over Germany during the first four months of the war were entirely of the reconnaissance type or were actually directed against purely military targets. Chief among these last were raids against British and German naval bases. But even here few clear-cut answers were forthcoming to questions which had caused pre-war debating. Beyond doubt squadrons on both sides inflicted serious damage on enemy warships, but no absolutely reliable reports were on hand at the year's end to indicate that the airplane had definitely proven its ability to sink a properly protected capital ship. The use of German planes against Allied ships of commerce in the North Sea on the other hand proved effective beyond question and seemed likely to replace in large degree German use of the submarine for that purpose.

By the end of the year both sides in the conflict were locked in a struggle to build up their fleets of fighting planes against the day when really large scale aerial warfare might get under way.

Figures on production and on airplanes in hand were naturally extremely hard to obtain, but consensus among American experts gave Great Britain credit for approximately 6000 first-line combat planes; France approximately 3000; Germany between 9000 and 10,000. In the field of reserve planes Germany was thought to possess about 7000 against 4000 for Great Britain and 1000 for France. At the year's end Great Britain was probably producing 1000 planes a month; France 400; Germany about 1200. With such a close numerical balance the deciding factor at the end of 1939 seemed likely to be the speed with which

the Allied nations could secure airplane deliveries from the United States. As of December 31 the Allies had placed orders for approximately 2000 combat planes and 1000 trainers with American factories and it seemed possible that all these ships plus another 1000 combat planes would be delivered by the end of 1940.

DANIEL SAYRE.

AFGHANISTAN, āf-gān'ī-stān; -stān'. A monarchy in central Asia, bounded by India, Iran, and the U.S.S.R. Area, 250,965 square miles; population, variously estimated at from 7 to 10 millions. Chief towns: Kabul (capital), 80,000 inhabitants; Kandahar, 60,000; Herat, 30,000; Mazar-i-Sharif, 20,000. Persian, Pashto, and Turki are the languages spoken. Islam is the principal religion. Elementary and secondary schools are free; for higher education there are technical, art, commercial, and medical schools.

Production and Trade. Though a great part of the country is of a mountainous nature and much of the land is dry and rocky, there are many productive valleys and plains which, with the aid of irrigation, yield good crops of cereals, fruits, and vegetables. Castor-oil, madder, and *asafetida* plants grow abundantly. Fruits, both fresh and preserved, are the staple food of a large section of the people throughout the year. The native fat-tailed sheep furnish the chief meat food, the grease from the tails being used as a substitute for butter, while the wool and skins are made into clothing. Lapis lazuli, copper, lead, iron, crude oil, and gold are the chief minerals. There are factories for the manufacture of matches, buttons, leather, wool, shoes, furniture, arms and ammunition, and clothing.

The principal imports are cotton goods, sugar, dyes, hardware, leather, and silver treasure; exports consist of lambskins, fruits, timber, carpets, and raw wool. Most of the trade is with India, the U.S.S.R., and Iran (Persia). The main routes to India are from Kabul through the Khyber Pass to Peshawar and from Kandahar to the railway terminal at Chaman in Baluchistan. Merchandise is transported to a large extent by camels and pack-ponies, but certain roads are used by motor vehicles during dry weather. There are telephone systems in the large towns, telegraphic communications linking Kabul and Kandahar with Peshawar and Chaman, and five wireless stations. In 1938 there were 4000 miles of highways.

Government. Revenue is estimated at 150,000,000 Afghan rupees (Afghani rupee is valued at about \$0.09). Afghanistan is a constitutional monarchy, with legislative power vested in a parliament consisting of the King, a senate of 45 members appointed by the King for life, and a national assembly of 109 elected members. King, Mohammed Zahir Shah (succeeded Nov. 8, 1933).

History. The outbreak of the European war in September, 1939, had almost immediate repercussions in Afghanistan which indicated that the isolated kingdom might soon be drawn into the conflagration. A rising against King Zahir Shah was started on the Indian frontier near the Khyber Pass on September 7 by Afghan supporters of former King Amanullah, who was forced to flee the country in 1929. The rebel army of some 3000 tribesmen failed to win the expected support from other Afghan tribes and was dispersed by Afghan troops with the co-operation of British-Indian political and military authorities.

Foreign agents, known to be active in Afghan-

istan, were believed to have inspired the rising. The *London Times Weekly* of June 21, 1939, reported that Afghanistan was "becoming more popular with Germans, Italians and Japanese than is justified by the economic opportunities offered in that country." The implication was that they were using the country as an espionage and propaganda base against both the Soviet Union and British India. German influence was said to be spurring Indian malcontents to stir up the frontier tribes against the British, as was done during the World War.

Russia became the principal threat to Afghanistan after the Soviet-Nazi rapprochement and the Soviet-Japanese armistice gave Moscow an opportunity to expand Soviet territories and influence. It was reported from Shanghai on October 2 that Afghanistan was mobilizing to repel border incursions by Russian troops. The Soviet pressure on Iran (q.v.) was likewise an indirect threat to Afghanistan. Istanbul reports late in October were that representatives of Afghanistan, Iran, Iraq, and Turkey were conferring there on joint action to resist a possible Soviet attack.

See INDIA, TURKEY and UNION OF SOVIET SOCIALIST REPUBLICS under *History*.

A. F. OF L. See AMERICAN FEDERATION OF LABOR.

AFRICA. A continent with an area of about 11,696,000 square miles and a population estimated at 155,300,000 on Dec. 31, 1938. See the separate articles on its countries and territories, such as ALGERIA, EGYPT, ITALIAN EAST AFRICA, KENYA, MOROCCO, SOUTH AFRICA, UNION OF; TUNISIA.

AFRICAN METHODIST EPISCOPAL CHURCH. See RELIGIOUS ORGANIZATIONS.

AGNES SCOTT COLLEGE. An institution for the higher education of women in Decatur (Atlanta), Georgia. Founded in 1889. The enrollment for 1939-40 was 490. The faculty number 52 and the administrative staff 16 members. The endowment is \$1,637,000, and the gross income for the session 1938-39 was \$361,500. There are 34,250 volumes in the library. A new Music Building and Auditorium, costing \$260,000, was under construction. President, James R. McCain.

AGRICULTURAL ADJUSTMENT ADMINISTRATION (AAA). The Agricultural Adjustment Administration is an agency in the U.S. Department of Agriculture which operates programs that carry out the purposes of the Soil Conservation and Domestic Allotment Act, the Agricultural Adjustment Act of 1938, and related legislation. The purpose of this legislation is to conserve soil, improve farm income, and stabilize the supplies of farm products available for market at levels adequate to meet domestic, export, and reserve requirements.

The 1939 program aimed to keep the acreage of soil-depleting crops within the program goal of 270 million to 285 million acres, as compared with an average of 308 million acres for the five years, 1928 through 1932. Total acreage of soil-depleting crops under the 1939 program was 282 million acres. At the same time, the program sought to give greater importance to the role that such soil-conserving crops as legumes and grasses play in the Nation's cropping system. The goal was established in view of the current domestic and foreign supply-and-demand situation for each crop, the acreage required to assure supplies adequate to meet normal domestic consumption, and the acreage of soil-depleting crops which can be

grown safely from the standpoint of soil conservation.

Participation in the program is voluntary. Farmers receive agricultural conservation payments for keeping within individual acreage allotments of soil-depleting crops and for carrying out specific soil-improving practices. A total of \$499,560,000 was appropriated by Congress for the 1939 program. To bring returns nearer to parity levels as authorized by the Agricultural Adjustment Act, price-adjustment payments totalling 212 million dollars were also made available to producers of cotton, corn in the commercial corn area, wheat, and rice, who remained within their acreage allotments.

The Agricultural Adjustment Act of 1938 authorizes loans on any agricultural commodity, and makes mandatory crop loans on surplus cotton, corn, wheat, and rice under specified conditions of supply or price. The stored commodities serve as collateral for the loans which are extended through the Commodity Credit Corporation. Under the 1939 program, such mandatory loans were in effect for corn at an average rate of 57 cents per bushel, and wheat at an average rate of about 64 cents per bushel. Although not mandatory, loans also were available to producers of cotton, several types of tobacco, and various other commodities.

Marketing quotas were proclaimed for cotton, rice, and for Burley, flue-cured and dark tobaccos under the 1939 program, in accordance with legislative provisions which require proclamation under certain conditions of supply or price. However, these quotas are not effective unless they have the approval of at least two-thirds of the producers affected who vote in a referendum. While a referendum was held for each of the commodities, approval was given only in the case of cotton, in which producers voted 84 per cent in favor of the quotas. The quotas provide for a penalty on cotton marketed in excess of the quota. Late in 1939 referenda were held on marketing quotas for cotton and flue-cured and Burley tobacco, and quotas were approved in each instance, by the following percentages of votes: Cotton, 91.2 per cent; flue-cured tobacco, 90 per cent; and Burley tobacco, 83.3 per cent.

Preliminary estimates indicate that the 1939 program includes about 82 per cent of the Nation's cropland. Nearly six million farmers, working through more than 3000 county committees and 23,000 community committees, participated. These committees handle local administration of the AAA and Federal Crop Insurance programs, and assist in administering related programs of other agencies in the Department of Agriculture. See SUPREME COURT.

R. M. EVANS.

AGRICULTURAL CREDIT. See AGRICULTURE.

AGRICULTURAL MARKETING ACT. See DAIRYING.

AGRICULTURE. The American farming industry in 1939 in many ways showed definite advances over the preceding years. Cash farm income, including Government payments, was from 200 to 300 million dollars larger than in 1938. Slightly smaller production of crops on fewer acres with high average yields was offset by increased production of livestock products and large carry-overs of wheat, cotton, and feed grains. Although spring and fall droughts were

serious in the Great Plains and much of the interior and there was a severe summer drought in the Northeastern States and the Winter Wheat Belt, conditions in general elsewhere resulted in a record tobacco crop, an excellent corn crop, and a plentiful feed supply. Agriculture in 1939 was featured by a slight decline in values of farm real estate; slight change in the volume of farm mortgage debt, except for more new mortgage financing; ample mortgage credit on favorable terms; a greater volume of outstanding short-term loans; a slightly larger farm population; slightly lower farm wage rates; higher costs for farm machinery; and little change in average costs of building materials and fertilizers. Exports of farm products were reduced early in the year by several causes, although outward movement of certain commodities rose later in response to European war demands. Imports of competing products were much lower because of smaller consumer demand and abundant farm production. Farmers were aided in many ways by Governmental activities, including the soil conservation and crop adjustment programs; marketing agreements and surplus disposal, including the stamp plan; local, State, and Federal planning programs, especially for land use; crop insurance; sugar program; cotton adjustment and export program; and the Federal farm-credit institutions. The rural underprivileged were helped by rehabilitation; planning and guidance in farm and home management; co-operative medical care; adjustment of farm indebtedness; provisions for secure tenure; homestead projects; and the tenant farm-purchase program. The outlook for 1940, as seen near the end of 1939, was for a stronger demand for farm products, larger volume of marketing, slightly larger production for marketing, higher average prices and increased farm cash income. The several factors and trends active in the agricultural industry are treated in detail in the following pages. (See also sections on *Agriculture* under the States; sections on *Production* under foreign countries; separate articles on leading crops as CORN, COTTON, TOBACCO, WHEAT; METEOROLOGY; and articles on the following government topics: AGRICULTURE, DEPARTMENT OF; A.A.A.; COMMODITY CREDIT CORPORATION; F.S.C.C.; F.C.I.C.; F.S.A.; F.C.A.; FOOD AND DRUG ADMINISTRATION; *Farm Co-operatives* (under CO-OPERATIVES). See also DAIRYING, ENTOMOLOGY, ECONOMIC; FERTILIZERS; FORESTRY; HORTICULTURE; LIVESTOCK; POULTRY; SOILS; UNITED STATES under *Departments and Agencies* and LEGISLATION.

Agricultural Situation. Farm Income. Cash income from farm marketings in 1939 was estimated by the U.S. Department of Agriculture at \$7,711,000,000 and from government payments, \$807,000,000, a total of \$8,518,000,000; while for 1938, marketing income was \$7,599,000,000, government payments, \$482,000,000, and the total \$8,081,000,000. Cash income per farm was estimated at \$1199 and per capita \$259, against \$1184 and \$255 in 1938. The farm value of products retained for home consumption and the residential value of farm homes occupied were estimated at about \$2,000,000,000 in 1939 and, in addition, farmers received about \$2,000,000,000 from non-farm sources. Against this income, annual expenditures for commodities and services used currently in production during recent years have averaged a little more than \$2,000,000,000. Approximately \$2,000,000,000 was paid out on ac-

count of rent, taxes, interest, and hired labor, and about \$1,000,000,000 was needed to maintain farm plant and equipment.

Farm Real Estate. The slight decline in values of farm real estate during the year ended Mar. 1, 1939, only one point in the national index, was the first in six years. The index of average values per acre was 84 per cent of the 1912-14 level, versus 85 in 1937 and 1938 and still about 15 per cent above the 1933 low of 73. The decline during the year was attributed mainly to lower price levels for farm products and reduced farm income, and values were also affected adversely by the upward trend in farm taxes, and the extensive farm real estate holdings of creditor agencies. Average per-acre values continued upward in the East South Central group of States, marking the sixth consecutive year of increase, were unchanged in the South Atlantic and Mountain States, and declined slightly in each of the other major regions. The total holdings of farm real estate by leading groups of lending agencies were reported at \$1,019,000,000 as of Jan. 1, 1939, slightly below holdings on Jan. 1, 1938; and largest holdings were by life insurance companies, amounting to \$702,861,000. The changes in ownership per 1000 farms due to voluntary sales or trades fell from an average of 29.9 in the year ended Mar. 1, 1938, to 28.2 in 1939; forced sales due to foreclosures, etc., declined from 14.3 to 13.4 per 1000 farms; and due to delinquent taxes rose from 3.1 to 3.4 per 1000. Bankruptcies among farmers were reported in 1939 to have totaled 1799 during the year ended June 30, 1938, 3.6 per cent of all bankruptcies, as compared with 2479 in 1937, and 5917 in 1933.

Taxes. Farm real estate taxes levied in 1938, according to the U.S. Department of Agriculture, showed slight change from 1937 either on a per-acre basis or in relation to value, and a preliminary survey indicated little likelihood of any significant change from 1938 to 1939. The index of taxes per acre for the United States on a 1909-13 base stood at 186 in 1938 and 187 in 1937, compared with a low of 178 in 1934 and a peak of 284 in 1929. Taxes per \$100 of farm real estate value averaged \$1.16 in 1938 and \$1.15 in 1937, compared with a low of \$1.13 in 1936 and a peak of \$1.50 in 1932. Changes in taxes per acre between 1937 and 1938 were very small in most States, increases in many States being offset in the national average by States showing decreases. The latter included several with large reductions due to important changes in their property-tax laws. Factors seeming responsible for increases shown in each of the four years in large proportions of the State series included, in many States, continued pressure for restoration of governmental services curtailed during the depression; in some cases, restoration of salaries or resumption of debt service; and financing of new services.

Prices. Prices received by farmers for all farm products averaged 92 per cent of the five-year prewar average during 1939 against 95 per cent in 1938. During the first eight months of 1939, prices were relatively stable at a level averaging about five points lower than in the same months of 1938. Prices of grains, dairy, and poultry products began 1939 substantially below the January, 1938, level, and like those for meat animals worked steadily lower until the low of the year—88—in mid-August. Farm product prices rose sharply in response to the outbreak of hostilities in Europe in early September and the rise

placed the index at 98, the high point for the year. This advance was led by grains and meat animals. Prices receded slightly during October but held steady in November. Another small decline occurred in December, but the general level of prices December 15 was 96, the same as a year earlier. Not all commodities shared this year-end strength, for meat animals showed a marked decline, only part of which was seasonal in nature.

Average prices received by producers Dec. 15, 1939, based on reports to the U.S. Department of Agriculture, with seasonal average prices for crops in parentheses, were estimated for wheat 82.4 cents (67.6) per bushel, corn 50.3 (55.9), oats 34.7 (29.5), barley 43.8 (40.4), rye 52.3 (40.8), flaxseed \$1.80 (\$1.552), soybeans 97 (77.2), rice (rough) 72.3 (77.3), potatoes 70.8 (68.8), and apples 68 (66.3) cents per bushel, tobacco 13.8 (19.7) and cotton 9.71 (8.90) cents per pound, and cottonseed \$24.75 (\$21.67) and hay \$7.71 per ton. Beef cattle sold for \$6.85 per 100 lb., hogs for \$5.03, veal calves \$8.41, lambs \$7.38, and sheep \$3.79. Eggs were 20.5 cents per doz., butter 27.3 cents per lb., and whole milk wholesaled at \$1.99 per 100 lb. Wool brought 27.5 cents per lb. and live chickens 11.7 cents. Milk cows sold for \$59.90 each, horses \$77.10, and mules \$97.20. The corn-hog ratio (number of bushels equal in value to 100 pounds of hogs) was 10 versus 16 in December, 1938, and 11.2 the 5-year prewar average. The ratio of prices received to prices paid by farmers dropped from 80 in December, 1938, to 79 in December, 1939.

Farm Labor and Production Expenses.

Wage rates paid to farm workers averaged 122 per cent of prewar (\$20.41 per month with board) compared with 124 in 1938; up to September, 1939, less cash farm income was available to pay wages. Rural living costs, as measured by prices paid for commodities used in living, were 119 per cent of prewar in 1939, dropping slightly from 122 in 1938. The supply of farm workers averaged lower in 1938 as substantial increase in industrial employment took place. Further decline in total farm employment was prospective, continuing the trend evident since 1929, but greater use of mechanized equipment would enable farmers to maintain production at current levels. Minor rises in prices of some kinds of building materials were offset by declines in others in 1939. Prices of farm machinery other than tractors averaged slightly lower than 154 per cent of 1910-14 compared with 158 in 1938. Changes in prices of automobiles and trucks were not large. Wholesale prices of mixed fertilizers averaged slightly less than in 1938.

Foreign Trade in Farm Products. Several factors combined to make United States foreign trade in farm products unusually low during the year ended June 30, 1939. Exports, 23 per cent below 1937-38 in value, were the lowest in four years, largely as a result of low foreign industrial activity and purchasing power during the first half of the year, increased foreign production of commodities competing with United States farm exports, and the high price at which United States cotton was offered in the world market. Imports supplementary to domestic farm supplies, decreasing 17 per cent, reached the lowest total value in five years under the influence of smaller consumer demand and abundant farm production. Incomplete recovery of United States supplies of animal products from accumulated effects of the 1934 and 1936 droughts also helped to make exports lower,

and imports slightly higher, than they would otherwise have been.

Exports of farm products from the United States, exclusive of forest products, fell in value to \$682,914,000 during 1938-39, as compared with \$890,771,000 during 1937-38. In spite of large domestic supplies during the 1937-38 and 1938-39 marketing seasons, exports of farm products during 1938-39 were even lower than in 1936-37, the year of shortest domestic supplies, and made up a lower proportion of total United States exports than ever before, 23.7 per cent against 26.5 in 1937-38. Indexes of quantity showed that all major groups of agricultural exports, except cotton and linters and grain and grain products, were higher for 1938-39 than for 1937-38. Exports of cotton were \$134,000,000 lower in value than in 1937-38 while exports of agricultural products other than cotton declined \$74,000,000. There was a decline of \$78,000,000 in grain and grain products, smaller declines in tobacco, feed, and fodder, and moderate gains in fruits and pork and lard exports. The volume index was 63 per cent of prewar compared with 79 in 1937-38; 56 in 1936-37; 83 per cent in 1933-34; and with 136 in 1926-27. Sensational increase in the exports of cotton during the latter months of calendar 1939 was attributed largely to the government's export program and low stocks of American cotton in Europe.

Imports of farm products into the United States during 1938-39 were valued at \$998,616,000, a decrease of 13.4 per cent from 1937-38, which totaled \$1,155,136,000, and compared with \$1,536,695,000 in 1935-36, and \$614,000,000 in 1932-33, the low point of the depression. Supplementary agricultural imports in 1938-39 were about \$381,000,000 less than in 1936-37, when effects of drought and domestic demands were at their peak, about one-third of the decline occurring in grains and feeds. Reduction took place in imports of dairy and egg products, sugar, dutiable wool, hides and skins, and vegetable oils and oilseeds. Substantial increases were recorded in the quantity of tobacco and cattle imported. Agricultural imports made up about 48 per cent of all imports, 48.6 per cent, about \$486,140,000 being supplementary (competitive) items, and \$512,476,000 non-competitive. See IMPORTS AND EXPORTS. Aspects of and factors involved in foreign trade in farm products were discussed in the *Report of the Secretary of Agriculture for 1939*, pp. 1-14, 91-100, and in *Foreign Crops and Markets 39 (1939)* pp. 282-306 (Aug. 12, 1939), pp. 478-510 (Nov. 17, 1939), all U.S. Department of Agriculture.

Population. Farm population in the United States was estimated from U.S. Department of Agriculture surveys to total 32,059,000 on Jan. 1, 1939, compared with 31,819,000 a year before, and the peak of 32,076,690 in 1910. The movement to farms totaled 823,000 and to the cities 1,025,000, but the net loss by migration 202,000 was more than offset by the surplus of births over deaths.

Outlook. The features of the agricultural situation in 1939 and indicated developments in agricultural production and marketing in 1940, concerning the demand for farm products, farm credit and labor, equipment and fertilizer, farm family living, and the status and future of field crops for cash and feed, fruits, truck crops, nuts, livestock, poultry and their products, prepared by the U.S. Department of Agriculture in co-operation with State agencies were published in *The Farm Outlook for 1940* (M.P. 379, 1939); and

The Agricultural Situation (1939), monthly, (all U.S. Department of Agriculture).

Agricultural Credit Conditions. Farmers were expected to use from 5 to 10 per cent more short-term credit during 1939-40 for production and living costs, for livestock and machinery, and for farm improvements than in 1938-39, exclusive of Commodity Credit Corporation loans. Ample short-term credit would be available to meet all anticipated demands for credit by farmers of good credit standing. The commercial banks, production credit associations, and other agencies could easily expand their loans. Funds available for rehabilitation and emergency loans were slightly smaller than in 1938-39 and applications for rural electrification loans were exceeding available funds, but credit for other co-operative purposes seemed to be ample. Many farmers participating in the AAA farm programs were able to use conservation and price adjustment payments instead of borrowing funds.

The outstanding personal and collateral loans to farmers by commercial banks and short-term loans by the Farm Credit Administration increased during the year ended June 30, 1939, from \$1,166,492,000 to \$1,430,440,000, or about 23 per cent, about the same as the year before. The increase largely was accounted for by a rise of \$267,761,000, or 29 per cent in loans by commercial banks, due mainly to increased holdings of loans on stored farm products guaranteed by the Commodity Credit Corporation. Outstanding loans of banks for co-operatives decreased during 1938-39 from \$81,200,000 to \$59,576,000, which comprised commodity loans \$10,239,000, operating-capital loans \$25,872,000, and facility loans \$23,465,000. Since its inception to Sept. 28, 1939, the Rural Electrification Administration had allotted \$253,909,000 for loans for construction of rural distribution lines and generating stations and to finance installations of wiring and plumbing. Outstanding community and co-operative enterprise loans made by the Farm Security Administration increased from \$4,283,000 on June 30, 1938, to \$10,729,000 a year later. Financing through all Farm Credit Administration institutions increased during the last half of 1939, although total credit extended during the year, approximating \$600,000,000 was slightly lower than in 1938.

New loans from special appropriations for rehabilitation and emergency relief increased during 1938-39. The emergency crop production and feed loans by the Farm Credit Administration amounted to \$15,100,000 in 1938-39 compared to \$21,600,000 in 1937-38. Rehabilitation and emergency loans by the Farm Security Administration totaled \$113,000,000 in 1938-39 compared to \$67,300,000 during both 1937-38 and 1936-37, and its additional emergency subsistence grants to distressed farm families amounted to \$21,500,000, about \$1,000,000 less than in 1937-38.

Some increase in the volume of new mortgage financing was prospective late in 1939, largely in connection with farm real estate activity, farm improvements, and purchases of equipment. Extensive refinancing of distress mortgages had subsided greatly, and mortgage activity represented a more normal demand for credit to refinance maturing mortgages and to finance real estate transfers and additions to farm plant. Additions to mortgage debt through new financing probably would be offset by principal repayments, foreclosures, and reductions resulting from debt adjustments. Ample mortgage credit would con-

tinue to be available on favorable terms, and funds available for such loans from both Federal and private agencies were abundant. Increased funds were to be available in 1939-40 for tenant-purchase loans in 1300 eligible counties by the Farm Security Administration under the Bankhead-Jones Farm Tenant Act, amounting to \$38,000,000 compared with \$23,750,000 for 1938-39 and \$9,200,000 in 1937-38.

The farm mortgage debt was reduced markedly during the current decade—from \$9,631,000,000 in 1930 to \$7,071,000,000 in 1939—but was still much higher than in the years just before the World War. The reduction during the early 1930's was largely the result of foreclosures and distress transfers, while in recent years principal repayments were of increasing importance. Farm mortgage debt during the last 30 years was at a peak in 1922-23, about 172 per cent above the 1910-14 level, but declined in each subsequent year except 1927. The total on Jan. 1, 1939, was 27.6 per cent below that for Jan. 1, 1929, and about 34 per cent below 1922-23. Outstanding farm mortgage loans held by Federal Land Banks and Land Bank Commissioner totaled \$2,658,208,000 on June 30, 1939; by life insurance companies (estimated) \$881,000,000; commercial banks \$530,628,000; and held by joint stock land banks \$78,511,000. See also FARM CREDIT ADMINISTRATION, FARM SECURITY ADMINISTRATION, AGRICULTURAL ADJUSTMENT ADMINISTRATION, COMMODITY CREDIT CORPORATION.

Crop Production in 1939. Farm production was larger in 1939 than in 1938, according to the U.S. Department of Agriculture. The slightly smaller total yield of crops was more than offset by increased production of hogs and livestock products. There also were large carry-overs of wheat, cotton, and feed grains from preceding years to provide against possible shortages due to drought and other hazards. Total crop production in 1939 was about 1 per cent lower than in 1938 and nearly 4 per cent above the 1923-32 or "pre-drought" period average. Major crops showing increases were corn, barley, flaxseed, soybeans, and tobacco, and those with decreases included wheat, oats, rye, and peanuts. Tobacco and soybeans both were bumper crops surpassing all previous records. The area of the principal (46) crops harvested, 325,449,000 acres, was unusually small—the lowest since the early years of the World War—and compared with 341,744,000 acres in 1938 and a 1923-32 average of 354,000,000 acres. The reduction in 1939 appeared due to the large carry-overs, to the relatively low prices of some crops at planting time and to more general compliance with the adjustment program than in previous years. Much of the reduction resulted from discouragement, reduced plantings, and further heavy losses of acreage in a half dozen States in the central Great Plains area where drought conditions continued into winter. Pastures and ranges also dried prematurely, further retarding recovery of the livestock industry in this area. Yields per acre, however, averaged higher than in any of the last 25 years except 1937, and offset much of the reduction in acreage. Crop yields per acre were unusually good in the central and eastern Corn Belt, but were seriously reduced in the Central Great Plains by drought and in an excessively wet area extending from the Gulf into Alabama and northeastern Mississippi. The acreage and production of farm crops in the United States, as estimated by the U.S. Department of Agriculture, and yields for cereals

in foreign countries, as reported to the International Institute of Agriculture, are shown in the crop production tables and in the articles on individual crops.

ACREAGE AND PRODUCTION OF FARM CROPS IN THE UNITED STATES, IN 1938 AND 1939.

Bushels except as otherwise indicated.

Crop	Year	Acres harvested	Acre yield	Production
Corn	1939	88,803,000	29.5	2,619,137,000
	1938	92,222,000	27.8	2,562,197,000
Wheat	1939	53,696,000	14.1	754,971,000
	1938	69,869,000	13.3	931,702,000
Oats	1939	33,070,000	28.3	937,215,000
	1938	35,661,000	30.0	1,068,431,000
Barley	1939	12,600,000	21.9	276,298,000
	1938	10,513,000	24.1	253,005,000
Rye	1939	3,811,000	10.3	39,249,000
	1938	4,021,000	13.8	55,564,000
Buckwheat	1939	379,000	15.1	5,739,000
	1938	451,000	14.8	6,654,000
Flaxseed	1939	2,284,000	8.9	20,330,000
	1938	936,000	8.7	8,152,000
Rice	1939	1,039,000	50.3	52,306,000
	1938	1,076,000	48.8	52,506,000
Grainsorghum	1939	8,055,000	10.3	83,102,000
	1938	7,680,000	12.9	99,136,000
Cotton, lint	1939	23,928,000	235.9 ¹	11,792,000 ²
	1938	24,248,000	235.8 ¹	11,943,000 ²
Cottonseed	1939	.....	.....	5,239,000 ³
	1938	.....	.....	5,310,000 ³
Hay	1939	69,245,000	1.22 ⁴	84,526,000 ⁵
	1938	68,751,000	1.33 ⁴	91,531,000 ⁵
Sweet sorghums	1939	5,875,000	1.48 ⁴	8,666,000 ⁵
	1938	4,983,000	1.70 ⁴	8,452,000 ⁵
Beans, dry edible	1939	1,554,000	898 ¹	13,962,000 ⁴
	1938	1,627,000	925 ¹	15,053,000 ⁴
Peas, dry field	1939	204,000	18.2	3,713,000
	1938	205,000	16.8	3,454,000
Soybeans for beans	1939	4,226,000	20.7	87,409,000
	1938	3,105,000	20.2	62,729,000
Cowpeas for peas	1939	1,365,000	6.2	8,516,000
	1938	1,345,000	6.2	8,330,000
Peanuts	1939	1,859,000	634 ¹	1,179,505,000 ¹
	1938	1,708,000	764 ¹	1,305,800,000 ¹
Potatoes	1939	3,032,000	119.1	360,992,000
	1938	3,023,000	123.8	374,163,000
Sweet potatoes	1939	862,000	84.3	72,679,000
	1938	883,000	86.8	76,647,000
Tobacco	1939	1,942,000	911 ¹	1,769,639,000 ¹
	1938	1,600,000	860 ¹	1,376,471,000 ¹
Sugar beets	1939	921,000	11.6 ⁴	10,691,000 ⁵
	1938	930,000	12.5 ⁴	11,615,000 ⁵
Sugar cane	1939	259,000	22.4 ⁴	5,805,000 ⁵
	1938	294,000	22.9 ⁴	6,741,000 ⁵
Sugar cane for sirup	1939	141,000	164.2 ⁴	23,159,000 ⁵
	1938	137,000	162.2 ⁴	22,221,000 ⁵
Sorgo sirup	1939	180,000	56.8 ⁴	10,230,000 ⁵
	1938	189,000	60.3 ⁴	11,401,000 ⁵
Maple sirup	1939	10,520,000 ⁴	.....	2,515,000 ⁵
	1938	11,672,000 ⁴	.....	2,772,000 ⁵
Maple sugar	1939	10,520,000 ⁴	1.98 ⁷	760,000 ¹
	1938	11,672,000 ⁴	1.99 ⁷	1,078,000 ¹
Broomcorn	1939	223,000	271.5 ¹	30,000 ¹
	1938	271,000	272.9 ¹	37,000 ¹
Hops	1939	31,000	1,270 ¹	39,380,000 ¹
	1938	32,000	1,119 ¹	35,261,000 ¹

¹ pounds ² bales ³ tons ⁴ 100-lb. bags ⁵ gallons ⁶ trees tapped total equivalent sugar per tree

Experiment Stations and Extension. Problems of agriculture received serious consideration from research and extension services as well as from action agencies. Research in the agricultural experiment stations, located in each State and Territory, aimed more and more toward planning for permanence and economic stability and stressed less than in earlier years, the expansion of production to assure more adequate supplies of farm products for a growing population and to sell abroad. Research programs of the experiment stations embraced a total of about 8500 projects, financed from all sources. Covering a wide range

of agricultural and rural life problems, these projects dealt with agricultural planning and land use, conservation of soil and water, cultural practices and crop varieties for use in rehabilitation of drouth-stricken, eroded, and flooded lands, and for replacements in land use and crop-control programs; pasture research; production, distribution, marketing, and use of crop plant and animal products; and protection of crops and farm animals against diseases, insects and other pests. Special attention was paid to problems of tenancy, marginal lands, and low income groups; efficiency of farm business management; profit margin, market demands; consumer needs and preferences; human nutrition; and rural housing. Many of the enterprises were co-operative with other stations and with the Department of Agriculture. Features of contributions from current research were detailed in *Report on the Agricultural Experiment Stations, 1939* (U.S. Dept. Agri., Washington, D. C.). Financial support for the State stations derived from all sources included \$6,541,250 from Federal grants and \$14,081,509 from State and other supplementary sources, totaling \$20,622,659 for the year ended June 30, 1939.

Research of the stations and the Department (see AGRICULTURE, U.S. DEPARTMENT OF) was supplemented in nine co-operative regional research laboratories, each with a specific research problem of major importance in the region served respectively including improvement of vegetables, pastures, swine, sheep, and viability in poultry, industrial utilization of soybeans, animal diseases, irrigation water, and relation of soils to nutrition. Authorized for study of new and wider industrial outlets and markets for agricultural commodities, four other research laboratories were starting operations near New Orleans, Philadelphia, Peoria, and San Francisco. (See 1938 YEAR BOOK, p. 10.)

Extension services enabled farm people to make progress in sound land use planning, crop adjustment, soil conservation, and improved tenure by providing the latest scientific information about efficient production and marketing of crops and livestock, on social and economic trends, and about agencies to be utilized in carrying out their plans. During the year ended June 30, 1939, extension agents organized 1 million adult result demonstrations on farms and in farm homes, and 1¼ million group meetings, made 3 million visits to farm homes and received many office calls from farm people, and in other ways disseminated technical information and helped farmers to consider it in relation to other factors of rural living. Aided by 14,000 voluntary leaders, they gave assistance in marketing work in some 18,500 communities, helping nearly 1,200,000 farmers, either as individuals or as members of co-operative groups. The agents helped farm people to fight numerous crop and livestock pests; to overcome effects of floods, droughts, and hurricanes; to get better hogs and cows and poultry; to establish all-year gardens and well-filled pantries; to beautify their homes; and to develop rural recreation and other community facilities for better rural living. More than 1,250,000 boys and girls enrolled in 4-H club work in 1939 benefited from extension activities. Personally and through local leaders, farmer land-use planning committees, agricultural-conservation committeemen, and other agencies in educational work, extension agents helped millions of farm people toward more profitable farming and more satisfying life. The co-operative ex-

AGRICULTURE

International Institute of Agriculture and U.S. Department of Agriculture]

Average 1933-37.

Where no data are given, statistics are not available.
The production given for countries in the Southern Hemisphere is for the crop years 1938-39 and 1937-38.

tension organization of the U.S. Department of Agriculture, land grant colleges, and county governments comprised in addition to supervisory officials, agricultural agents in every county of agricultural importance, home demonstration agents in nearly two-thirds of the counties, 1169 assistant agents, about 1500 state extension specialists, and in 256 counties, special Negro agents. More than 500,000 voluntary local leaders, selected and trained by county agents, helped to extend improved farming and homekeeping practices and 4-H Club work to almost every community. Of the total of \$32,000,000 funds available in 1938-39 for all co-operative extension work, about \$18,000,000 came from Federal grants to the States, \$6,500,000 from State funds, \$6,500,000 from county appropriations, and about \$890,000 from farm organizations. (See 1938 YEAR BOOK, p. 12.)

World Conditions and Agriculture. Prominent among major world conditions affecting American agriculture and its products were the controls of agricultural trade and production in the present war in Europe. From the outset, the war had been characterized by strict government control of international trade and, to a lesser extent, of production, prices, and consumption. Indeed, according to a special analysis of the U.S. Department of Agriculture, the war had altered world trade currents in such manner as to make prospects for United States farm exports poorer than if peace had prevailed. Trade controls in the arsenal of economic weapons used by belligerents and the economic defenses erected by belligerents and neutrals included naval blockades which barred American farm products from German-controlled territory, requisition and control of shipping, allocation of foreign exchange, import and export licensing, requisitioning of stocks, and control of prices and distribution which were being applied in many ways that governed the flow of American farm products into the territory of Allied belligerents or of neutral countries in the war zones. The Allies pooled economic and financial resources and they made arrangements to centralize their purchases through Government commissions. Although this latter means of trade control had not yet been brought to bear directly on United States farm exports, it did have an indirect effect since the centralized purchasing commissions bought farm products heavily in British Dominions and other countries where they could deal directly with governments. Application of these several types of trade controls had already exerted or might exert more or less adverse effects on trade of the United States in the principal export farm products: Cotton, wheat, tobacco, pork products, and fruits.

Among the activities and movements in foreign countries either affecting or which might affect American agriculture in world trade relations in some way were European wheat requirements and policies; the German-Rumanian economic agreement, and the increasing domination of southeastern European trade by Germany; increasing aids to British agriculture; demands of the British textile industry for raw cotton; expansion of food production and farm price supporting measures in Ireland; regulation of farm product marketing in Ontario; the agricultural problems of India; price control in New Zealand, and the wheat industry assistance scheme in Australia; agriculture in the French balance of trade, and the hog industry in France and Sweden; American tobacco markets in the Netherlands and

Switzerland; agriculture in the Soviet Ukraine, and the effects of drought and the purge on Soviet Union agriculture; foreign trade monopoly in poultry and eggs by Italy; control of wool prices and sales in Spain, and Turkish tobacco legislation. Other trends and events in world agriculture, also discussed in detail in *Foreign Agriculture* (vol. 3, 1939) and *Foreign Crops and Markets* (vol. 38 and 39, 1939), included the status of cotton production in Latin America; the grain-elevator program, price-fixing, and the pear industry in Argentina, and the Argentina-Brazil trade agreement; encouragement to agriculture and livestock industry in Venezuela; land problems in Mexico; aid to cattle industry in Colombia; aid to cotton growers in Egypt; recent Japanese agricultural policies, and the 10-year plan for agriculture in Formosa (Taiwan), and the agricultural situation in China. (See the respective countries under *Production*.)

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AGRICULTURE, U.S. DEPARTMENT OF. Henry Agard Wallace of Iowa was Secretary of Agriculture during 1939 and Milburn L. Wilson was Under Secretary. By the government administrative reorganization effective on July 1 (see under UNITED STATES), the Department took over the previously independent agencies which had to do with agriculture, namely, the Farm Credit Administration, the Commodity Credit Corporation, and the Rural Electrification Administration. At the same time, the Bureau of Biological Survey was transferred to the Department of the Interior and the Bureau of Public Roads became a part of the new Federal Works Agency as the Public Roads Administration (see ROADS AND STREETS); the Foreign Agricultural Service was put under the jurisdiction of the Department of State.

Because of the opposition of farm groups to

the absorption of the Farm Credit Administration by the Department of Agriculture, the FCA maintained a quasi-independent status within the Department for some months. In December Secretary Wallace maintained that, if he were to be held responsible for the FCA, he should have jurisdiction over it. The concurrence of the President in this opinion resulted in the resignation of the Administrator, F. F. Hill, who was succeeded by A. G. Black, chief of the Bureau of Agricultural Economics. The specific cause of controversy was said to be the wish of Secretary Wallace to make available for drought and rehabilitation work the \$600,000,000 in unused lending power possessed by the FCA. Mr. Hill maintained that such a policy would jeopardize the \$1,400,000,000 investment of banks and private investors in FCA bonds and that the credit program should not be confused with the farm-aid program. At the end of the year, Secretary Wallace announced a program for co-ordinating the activities of the various agencies in the Department in the effort to increase conservation.

See the separate articles on the following divisions: AGRICULTURAL ADJUSTMENT ADMINISTRATION; COMMODITY CREDIT CORPORATION; ENTOMOLOGY AND PLANT QUARANTINE, BUREAU OF; FARM CREDIT ADMINISTRATION; FARM SECURITY ADMINISTRATION; FEDERAL CROP INSURANCE CORPORATION; FEDERAL SURPLUS COMMODITIES CORPORATION; FOOD AND DRUG ADMINISTRATION. Other work of the Department is discussed under AGRICULTURE; DAIRYING; ELECTRIC LIGHT AND POWER; FORESTRY; LIVESTOCK; METEOROLOGY; and SOILS. For expenditures, see the table under PUBLIC FINANCE.

AIR CONDITIONING. Significant is the enactment by the 1939 legislature of North Carolina of an Act calling for licensing and regulation of air-conditioning contractors in that State. Designed to protect public health and safety, the law places the air-conditioning industry under the jurisdiction of the State Board of Examiners for plumbing and heating contractors. First examinations for applicants were held in Raleigh in August.

Typifying equipment development, a new 160-ton 4-unit electro-mechanical refrigerating plant installed to serve the air-conditioning system of a Chicago theater this year requires but 160 h.p. in motors and occupies 200 square feet of floor space as compared with the 1000 square feet required by the 15-year-old 200-ton 250-h.p. equipment that was displaced. A new 100-ton self-contained hermetically sealed unit using a motor built integrally with the compressor and cooled by the refrigerant gas is credited with 12 per cent better efficiency and 66 per cent less floor space than conventional belted units. Various technical contributions have been made toward the development of satisfactory and economical combined heating and air-conditioning equipment for domestic use. See also HEATING AND VENTILATING.

Air conditioning as an industry still is too young for statistics gathered to date to be either complete or particularly significant. Beginning with 1939, however, more effective efforts were made by the U.S. Department of Commerce, the Edison Electric Institute, and other interested agencies to collect and interpret statistics from all over the United States. This should facilitate more fruitful and revealing analyses in later years. Although not supporting important comparisons, the 1939 *incomplete* data do reveal vari-

ous interesting and significant facts, some of which will be touched upon briefly in the following paragraphs.

Partial data available indicate that air conditioning installations, in terms of the power required for their operation are distributed about as follows:

1. Stores and miscellaneous commercial buildings	24 %
2. Theaters	20 %
3. Office buildings and individual offices	17.5 %
4. Restaurants, hotels, clubs, etc.	14.5 %
5. Industrial buildings, factories, etc.	12 %
6. Public buildings, government, etc.	6.3 %
7. Banks	2.5 %
8. Residences, including apartments	2 %
9. Hospitals	0.6 %
10. Broadcasting stations	0.6 %

The commercial group, represented by items 1, 2, 3, 4, 7, seems to be the most important for 1939, not only in installed capacity (approximately 78 per cent) but also in number of installations (approximately 76 per cent). In number of installations, the residential group comes next with about 18 per cent. Present trend in residential installations seems strongly toward the use of room-cooling units. Some 40-odd electric utilities reported about 7400 residential installations averaging about 2 h.p. each. Of these 7400 reported from all over the United States, it is interesting to note that more than 40 per cent are concentrated in 10 cities: St. Louis, Kansas City, Oklahoma City, Tulsa, Cincinnati, Houston, Dallas, Philadelphia, Baltimore, and Riverside (Calif.). New York and Chicago come in only for honorable mention.

Tentative results of studies into the use of air conditioning for the treatment of human ills seem to indicate important and significant possibilities for the future. For one thing, where air-conditioned operating and bed rooms have been used, post-operative complications have been reported as being well below normal.

In the field of vehicle cooling, at least one passenger automobile manufacturer has announced the availability of a mechanical air-conditioning unit as standardized "extra" equipment. Many of the new buses particularly for use in the Southwest and for long runs have been air cooled. It is estimated that there are about 400 such vehicles. In the railroad field, it was reported that as of July 1, 1939, a total of 11,350 cars had been air-conditioned, approximately 550 of them during the preceding 12 months. Present indications are that most of the existing cars which the railroads intend to air-condition have been completed, and that hereafter most such air-conditioning installations will be made in new cars as they are built. Most air-conditioned cars now in operation are on the through trains of trunkline railroads, but a Southern railroad has reported interesting success in the use of air-conditioned cars for inter-urban traffic in competition with highway buses.

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AIRPLANES, AIRPORTS, AIRSHIPS, AIR TRANSPORT, AIRWAYS. See AERONAUTICS.

AIR WARFARE. See EUROPEAN WAR.

AJARIAN AUTONOMOUS SOVIET SOCIALIST REPUBLICS. See GEORGIAN SOVIET SOCIALIST REPUBLIC.

AKRON, THE UNIVERSITY OF. A coeducational institution of higher learning in Akron, Ohio, founded in 1870 as Buchtel College and

taken over by the city and renamed in 1913. There were enrolled in the summer session of 1939, 440 students. For the autumn day session the enrollment was 1640 and for the autumn evening session, 1461. The faculty numbered 116. The income for the year, including tax levy from the city, was \$388,778. The library contained 52,370 volumes. The construction of a new student building was completed Nov. 10, 1939. President, Hezleton E. Simmons, Sc.D.

ALABAMA. Area and Population. Area, 51,998 square miles; included (1930) water, 719 square miles. Population: Apr. 1, 1930 (census), 2,646,248; July 1, 1937 (Federal estimate), 2,895,000; 1920 (census), 2,348,174. Birmingham had (1930) 259,678 inhabitants; Montgomery, the capital, 66,079.

Agriculture. Alabama harvested, in 1939, 7,850,600 acres of principal crops. On 2,037,000 acres, cotton, the main crop, made 780,000 bales (estimated value to the producer, \$34,710,000). The year's harvested acreage of cotton was less than three-fourths of the average for the decade 1928-37; the year's yield per acre, 183 lb., was also below the decade's average, though most other States giving up acreage had improved yield per acre. On 3,408,000 acres, corn gave 34,080,000 bu. (\$26,582,000); tame hay, on 840,000 acres, 596,000 tons (\$6,139,000); peanuts, 270,000 acres, 128,250,000 lb. (\$3,976,000); sweet potatoes, 110,000 acres, 8,800,000 bu. (\$7,040,000); potatoes, 45,000 acres, 4,860,000 bu. (\$2,916,000); oats, 132,000 acres, 2,838,000 bu. (\$1,476,000). Peaches gathered for market amounted to 1,705,000 bu. (\$1,449,000).

Manufacturing. Manufacturing establishments in Alabama numbered 1874 in 1937; employed 120,301 wage-earners (as against 94,345 in 1935); paid \$96,058,401 in wages (in 1935, \$60,643,479); produced goods to the value of \$573,763,522 (in 1935, \$257,226,162); and to the last-named sum, contributed, by manufacture, the value of \$237,435,861 (in 1935, \$146,583,916). The value of the output of cotton woven goods was \$87,327,487; of lumber and timber, \$31,915,650; of cotton yarn and thread, \$23,245,789; of blast-furnace products, \$39,629,075. Birmingham, the chief manufacturing city, had in 1937, establishments to the number of 287, employing 14,300 wage-earners, and producing in the year goods to the value of \$93,557,699.

Mineral Production. The 37 iron-ore mines active in 1938 shipped 4,281,332 gross tons of ore, as against 6,350,316 from 34 mines, for 1937; shipments by yearly value declined to \$7,341,620 (1938) from \$10,747,969 (1937). Blast furnaces' shipments of pig iron, produced chiefly from the State's native ore, declined similarly, to 1,990,342 gross tons (1938) from 2,528,785 (1937), and to \$29,190,091 from \$42,188,993. The red hematite ore forming nine-tenths or more of the iron ore produced was apt to contain nearly enough lime to provide its own fluxing; it averaged over 35 per cent in content of metallic iron. The coal mines' output diminished to about 10,950,000 net tons (1938), from 12,440,000, in value \$29,857,000 (1937). Byproduct coke ovens, using native coal almost wholly, yielded 3,374,898 net tons of coke (1938), as against 4,529,771, in value \$13,275,098, for 1937. Shipments of cement, approximating the annual production, totaled 4,548,079 barrels (1938) about the same as the 4,403,459 barrels of 1937; the totals by value were \$6,114,246 and \$6,165,974 respectively.

Education. Alabama's inhabitants of school age (from 6 to 20 years) were reckoned, for the academic year 1938-39, at 884,281. The year's enrollments of pupils in public schools numbered 691,319. This comprised 510,342 in elementary study and 180,977 in high school. Expenditures in the year 1937-38, for public-school education, came to \$21,132,741 in all; of this, \$18,425,496 was for current expense. Teachers in public schools numbered 19,005; their salaries for the year 1937-38 averaged \$673.

Legislation. The regular quadrennial session of the Legislature began on January 1. Both houses supported in the main the proposals of the incoming Governor, Dixon, for changes in the organization of the State government and for improving the system of taxation. The State's tax on sales, already in application but on a temporary basis, was not only made permanent but was rid of a flock of exemptions to its provisions, chiefly in favor of foodstuffs; by the calculations of Governor Dixon, the tax, after the removal of these exemptions, was to yield \$750,000 more a year than its established proceeds of \$5,500,000. In accordance with another proposal by the Governor an act was passed to prevent individuals and localities from escaping their share of the general tax on property; to this end the act supplanted the existing elected county boards of tax review with appointed tax-equalization boards. The State Tax Commission, composed of three members, was abolished and in its place was created a department under a single head. The Governor received authority to discharge executive appointees. Other bills authorized consolidations of divers of the State's governmental services. The session enacted provision for a system of civil service to cover the State's employees. The design and motto of the State's great seal were changed.

At the close of the regular session the Legislature reconvened, in special session (March 14) to consider seven proposed amendments to the State's constitution, recommended by the Governor for submission to the people. It rejected a proposal to requalify as voters those paying up two years' delinquent poll taxes; rejected legislative reapportionment; and approved some less disputed proposals. A measure requiring cities to negotiate for existing privately owned electric systems before building their own was adopted (August 15).

Political and Other Events. Frank M. Dixon, who took office as Governor January 16, had previously practiced law in Birmingham. He brought to his new position definite ideas and proposals for the advancement of Alabama; these had to do particularly with the State's economic position, both with regard to the rest of the Union and as to the State's internal organization of economic life. Dixon was able to obtain from the Legislature the enactment of a number of measures that he sought in connection with such proposals.

The Legislature's act removing from the State's great seal the motto "Here we rest" (see above) was preceded by an organized agitation for this change; the Alabama division of the Daughters of the Confederacy not only opposed the old motto on the usual ground that its wording was unhappy and failed to express the energetic habits of the population, but also brought forward material indicating that the motto had been the work of a Governor of the days of Reconstruction. Alabama's new great seal showed a simplified map of

the State and carried the motto "We dare defend our rights."

Athens College started (December 14) building a silk-hosiery manufactory at Athens; the first unit, to start operation early in 1940, was to give livelihood to 100 women students.

Economic Conditions. The improvement of business, month for month, as compared with 1938, was conspicuous and, for much of the year, above the average for other parts of the Union. For example, retail sales made in July were reported as exceeding those of July, 1938, by 17.3 per cent for Alabama, as against 7 per cent for all the States that furnished such figures. On the other hand the State's industrial prospects were regarded as deeply involved by the move of the Federal Wage and Hour Administrator setting the minimum of pay for textile workers at 32½ cents an hour. In hearings preliminary to such a ruling, Governor Dixon and other spokesmen for the State asserted (June 30) that the prohibition of work in the cotton mills at less than this pay would handicap the State's industry in relation to that of States where higher wages and lower freight rates prevailed.

An exceptionally heavy rainfall in southern and central Alabama (August 17) created floods in the Alabama River and its tributary the Cahaba. Several thousand people were estimated to have been driven from their homes by the water, many were marooned and had to be rescued, and several counties suffered the loss of a great part of the growing corn and cotton.

Officers. Alabama's chief officers, serving in 1939, were: Governor, Frank M. Dixon (Dem.); Lieutenant-Governor, A. A. Carmichael; Secretary of State, John Brandon; Treasurer, Charles E. McCall; Auditor, Howell Turner; Attorney-General, T. S. Lawson; Superintendent of Education, A. H. Collins.

ALABAMA, UNIVERSITY OF. A coeducational State institution for higher learning at University, Ala., founded in 1831. For the autumn term of 1939 the enrollment was 5300; the summer school registration was 2625. The faculty for 1938-39 numbered 407. The productive funds of the university amounted to \$4,875,123 and the income for the year was \$1,632,195. The library contained 220,568 volumes. In the past five years a building program involving a total expenditure of \$2,500,000 has been completed. President, Richard C. Foster, LL.D., D.C.L.

ALAND ISLANDS, REMILITARIZATION OF. See FINLAND and SWEDEN under *History*.

ALASKA. A non-contiguous territory of the United States; area, 586,400 square miles; inclusive of inland waters; population, 59,278 in 1930, 55,036 in 1920; whites (1930) numbered 28,640, Indians and Eskimos 29,983. Capital, Juneau, population (1930) 4043. Governor, John W. Troy (resigned August 29; see under *Events*, below).

Transportation. The Alaska Railroad, built and owned by the Federal Government, connects Seward, on the southern coast, with Fairbanks, on the Tanana River, to the north, thus linking the seaboard with the river routes of the Yukon basin. This railway's operations in the fiscal year ended with June 30, 1939, caused a deficit of \$19,831; the year's revenue was \$259,452 on 27,436 passengers and \$1,634,393 on 147,904 tons of freight, largely coal. In the absence of commonly traveled routes overland, ingress and egress were chiefly by sea; 19 passenger vessels

and 8 freighters that entered Alaskan waters in the year ended with June 30 carried 68,065 passengers, or thereabout. Highways built subsequently to 1901, according to Governor Troy's report issued November 30, aggregated only 2400 miles, but were supplemented by 9000 miles of tramways, sled roads, permanent trails, and temporary flagged trails; in proportion to the extent of the territory, roads were very scanty, and yet in proportion to the number of the population, Alaska had far more miles of highway than did the United States (Alaska, about 1 mile to 24 inhabitants; the States, as a whole, 1 mile to 43 inhabitants). The Governor's report held that the building of roads failed to keep up with the territory's requirements, despite the territorial government's having lately made the greatest of its appropriations for this purpose up to that time. At the Mount McKinley National Park, the count of visitors up to the end of September totaled 2262 for 1939, as against 1487 for 1938. The movement for the construction of a highway through Canadian territory, to connect Alaska with the United States was carried on in 1939; it offered the prospect not only of drawing more tourists and possible settlers but also of affording visitors, when they came, a better chance of seeing the area, since they could by this route best bring their own means of highway travel with them. Aviation more than ever served as the standard means of going quickly to and from remote settlements, notably mining camps; few as were the white population, the number of airplanes in commercial service was reported as about 175; that of fields prepared for their use, as 129. The Alaska Aeronautics and Communications Commission maintained in 1939 a system of reports by radio, on the weather. These reports, built on data from meteorological stations at Fairbanks, Nome, Cordova, Juneau, and Graciosa Island, were radioed to help aviators.

Mineral Production. The value of the mineral production of 1938 was stated as \$28,607,000, of which gold furnished \$23,170,000. Of the gold obtained 36 per cent came from lode mines and 64 per cent from placer operations. Nearly two-thirds of the placer output was due to 44 dredging enterprises. Of other mineral production copper made up more than one-half and platinum nearly one-fourth.

Fisheries. The taking and packing of salmon, the chief part of the fishing industry and indeed the source of the greater part of yearly exports from the territory, suffered a severe decline in 1938. Not only did the quantity of salmon that was packed fall below that for 1937, but the estimated value of the shipments of salmon fell to \$37,190,961 for the fiscal year 1939, from \$42,677,210 for the year before. The early weeks of the salmon-packing season of 1939 showed no improvement over 1938, but results for the entire season were still to be reported at the year-end. The salmon-canneries at Ketchikan were disturbed in July by rival efforts of the C.I.O. and the A.F.L. to gain control of the labor. The shipments of fish other than salmon fell to the amount of \$6,411,852 for the fiscal year 1939, from \$7,547,815 for the year previous.

The depletion of the supply of salmon and also of herring caused the Department of the Interior to hold an inquiry in the territory in 1939, taking public testimony. In accordance with resulting recommendations from the Bureau of Fisheries the Secretary of the Interior drew up regulations

designed to cut down commercial taking of salmon in the Bristol Bay area in 1940 by one-half, in order to offset the diminution in the run of red salmon said to occur chiefly in the years of which the numbers were divisible by five; also to prohibit fishing for herring, except in some minor ways, in southeastern Alaska. See FISHERIES, BUREAU OF.

Political and Other Events. Governor Troy resigned, August 29, for the stated reason of ill-health, and his service as Governor ceased on October 15. The President recommended to the Secretary of the Interior the appointment of Ernest H. Gruening to succeed Troy. This proposal drew a protest from Alaska's Territorial Delegate, Anthony J. Dimond, who advocated the appointment of a resident. No nomination was sent to the Senate; and after the adjournment of Congress the President let it be understood that no nomination would be made for the time being. Gruening's appointment was finally announced, November 16.

Efforts to push the growth of the Alaskan population became increasingly the Territory's concern. The very sparsity of the population hindered economic and social development; this hindrance worked in divers ways more or less analogous to the already-noted paradox, of roads abundant in proportion to the fewness of people, yet scant as means for these people's intercommunication over great distance. Many Alaskans hoped to advance the fortunes and numbers of their community by the demand for the appointment of a resident as Governor; an Alaskan, it was felt, would know best what was wanted. The demand for Statehood, a long-sought ambition, aimed farther along the same course; its realization would give not only a resident for Governor, but a resident chosen at the Alaskan polls and subject to local instead of Federal control. Governor Troy's last annual report, issued late in 1939, did not recommend Statehood, but went part way, by urging that the Federal Government definitely bestow on Alaska, through a territorial organic act, "those primary rights of self-government which are contained in the organic acts of earlier territories." The Alaska Home Rule Association issued, March 16, a demand for immediate full territorial status and later Statehood.

From outside Alaska, though not necessarily without approval from that quarter, there appeared in Congress a proposal for augmenting the Alaskan population and at the same time harboring a great group of people not wanted elsewhere. Senator Gibson of Vermont wrote this plan into a bill and introduced it in the Senate, June 29. The bill would admit into Alaska colonists of any nationality, if they would give up former allegiance and if they had not engaged in subversive activity. The pressure of immigration coming at the time—refugees fleeing lands overrun by arms or purged by dictators—made this measure one, above all, for switching refugees into Alaska.

The Federal experiment in colonization in the Matanuska valley continued to provide incident. The official connection with this colony had passed to the Department of the Interior in September, 1938; there followed, Oct. 30, 1938, a report that about 86 families of colonists had left or were leaving; the House of Representatives' committee on appropriations gave out, Mar. 8, 1939, testimony from Secretary of the Interior Ickes in a recent hearing, that he had ordered the supervisors to expel from the colony those disin-

clined to work. On August 4 a dispatch from Anchorage reported that the Government, after several months of litigation, had bought out a colonist, Walter A. Pipple, thus ridding the colony of a farmer who had made a desirable income by selling his own products, opposing attempts to make him sell through the colony's co-operative organization. A heavy snow (12 inches or more), October 8, fell on the colonists' partly unharvested grain, hay, potatoes, and cabbages, raising apprehensions of their losing much of the year's return.

ALBANIA, ăl-bă'nî-ă. A former Balkan kingdom on the east shore of the Adriatic Sea, annexed by Italy on Apr. 8, 1939. Area, 10,629 square miles; population, estimated at 1,120,000 on Mar. 31, 1937 (1,003,124 at 1930 census). Capital, Tirana (pop. 30,806 in 1930); other chief towns, Scutari (Shkodër), 29,209; Koritsa (Korçë), 22,787; Elbasan, 13,796; Durazzo (Durrës), the chief port, 8739.

Education and Religion. Illiteracy is high. In 1938 there were 2108 pupils in infant schools, 54,532 in 623 state primary schools, 5677 in 17 intermediate schools, and 459 Albanian students in various foreign universities. By religion, the Albanians are divided as follows: Moslems, 688,280; Orthodox Christians (Church of Albania), 210,313; Roman Catholics, 104,184.

Production. Agriculture and stock raising are the main occupations. The principal products are corn (141,300 metric tons in 1938), tobacco (2100 metric tons, 1938), wool (2300 metric tons, 1937), timber, hides, dairy products, fish and olive oil. The 1938 harvest of other cereals was (in metric tons): Wheat, 44,900; barley, 4200; rye, 3300; oats, 11,300. Some cotton, potatoes, and fruit are grown. Albanian petroleum production (estimated capacity, 300,000 tons in 1939) is refined in newly opened hydrogenation plants in Leghorn and Bari, Italy, and is capable of supplying half of Italy's peace-time gasoline requirements. Copper, lignite, salt, and bitumen are produced in small quantities. There are considerable untapped mineral resources. Manufacturing is confined largely to the preparation of flour, olive oil, and cheese.

Foreign Trade. Imports in 1937 were valued at 20,315,687 gold francs (16,777,691 in 1936); exports, 10,175,065 (7,434,621). Italy supplied 4,881,000 francs of imports in 1937 and took exports to the value of 7,998,357. The chief imports were cotton and cotton textiles, corn, benzine, woollen goods, and petroleum; chief exports, wool, hides and furs, cheese, cattle, eggs, and timber.

Finance. Budget estimates for the fiscal year ended Mar. 31, 1939, placed revenues at 28,565,400 gold francs and expenditures at 28,235,400. Under a monetary union with Italy established Apr. 20, 1939, the value of the Albanian gold franc was fixed at 6.25 lire per franc. The public debt in 1938 was 68,200,000 gold francs, representing the amount outstanding of a series of loans extended by Italy in return for political and economic concessions (see 1938 YEAR BOOK, p. 27, for details).

Transportation. There are no railways. The road network at the beginning of 1939 comprised 1240 miles, of which about 745 miles were automobile highways and the remainder local roads. Italy has a monopoly of Albanian air services, which connect Tirana with Rome, Salonika, Scutari, Koritsa, Valona, and other towns.

Government. Zog I was proclaimed King Sept. 1, 1928, after having been President of the Albanian Republic since Jan. 31, 1925. He ruled dictatorially with the aid of Italian advisers, a

Council of Ministers and a hand-picked unicameral parliament of 58 members. An Italian-Albanian defensive alliance was concluded Nov. 22, 1927. For the regime established by Italy in 1939, see *History*.

HISTORY

Friction with Italy. Mussolini's plans for establishing complete Italian domination in Albania encountered growing resistance from King Zog in 1938 and 1939. During preceding years Zog had acquiesced, under pressure and in return for Italian loans, in the gradual extension of Italian economic and political control (see preceding YEAR BOOKS). But he stubbornly resisted Italian efforts to create a Fascist movement in Albania, calculated to overcome the obstructions encountered at Tirana and bring about more effective collaboration with Rome.

During the European crisis of September, 1938, over Czecho-Slovakia, King Zog was reported to have approached Great Britain and France with an offer to denounce his Italian alliance and bar Italian troops and ships from his territory and ports in case of a Mediterranean war. As the Italians were bound by the 1927 treaty not to interfere directly in Albanian internal affairs, they undertook to promote a revolt against Zog, hoping to secure a government at Tirana more amenable to Italian wishes.

In February of 1939 King Zog learned of the plot. He expelled Giovanni Giro, the Fascist agent who had been preparing the revolt by bribery and anti-Zog propaganda among the Albanian tribes. At the same time some Italophile Albanians were arrested for participation in the plot. The Italian Minister at Tirana then informed the King that unless the prisoners were released, Italy would denounce its alliance with Albania. Realizing that his throne was in danger, Zog asked British help against an Italian attack. At the same time he sought to reach an agreement with Mussolini that would permit him to retain his position. Before the negotiations with Britain had reached a definite conclusion, the German seizure of Bohemia and Moravia and the exigencies of Italy's domestic and international position led Mussolini to act. Rising opposition to Zog's rule in Albania also made the time opportune. It was widely charged that the King and his associates at Tirana were looting the public treasury and diverting into their own pockets the proceeds of the Italian loans. Italian agents fanned this discontent and helped to produce the disorganization that attended the subsequent Italian onslaught. Reports of attacks upon Italians in Albania provided a pretext for action.

The Italian Invasion. On Apr. 7, 1939 (Good Friday), some 35,000 Italian troops were landed from 100 naval vessels at the Albanian ports of Durazzo, Valona, Santi Quaranti, and San Giovanni di Medua. Supported by naval bombardments and demonstrations by Italian air squadrons, the invaders soon crushed the resistance offered by part of the small Albanian army and in a few days overran the entire country. The King and his Ministers fled across the Greek border, leaving those Albanians who wished to resist virtually leaderless. The Italians reported their losses at 12 killed and 53 wounded. Neutral sources placed the Albanian losses at several hundred.

Political Union with Italy. The Italians proceeded immediately to incorporate Albania in their empire politically, economically, and from a mili-

tary point of view. On April 8 Albania was formally proclaimed an Italian protectorate. Four days later a hand-picked Constituent Assembly convened at Tirana under Italian auspices and passed a resolution abrogating the existing constitution and regime, forming a new government headed by Premier Shevket Verlaci, and offering the Crown of Albania to King Victor Emmanuel of Italy. The offer was accepted by the Fascist Grand Council in Rome the following day and a personal union between the two countries was thus effected.

The Italian Minister in Tirana, Francesco Jacomini di San Savino, was appointed Victor Emmanuel's provisional Lieutenant-Governor in Albania. On June 3 King Victor Emmanuel presented to an Albanian delegation in Rome a constitutional statute eliminating the last vestige of Albanian political independence. The Albanian throne was made hereditary under Victor Emmanuel's dynasty. Legislative, executive, and judicial power was vested in the King of Italy. He delegated his legislative power to a Superior Fascist Corporative Council, based upon a newly organized Albanian Fascist party. The King was empowered to convoke and adjourn the Council and appoint its President and Vice President. All legislation was to be approved by open voting and the King's approval was required before any law could go into effect.

The King's executive and judicial powers were likewise delegated to Albanian officials appointed by him and acting under Italian guidance. Albanian was retained as the official language. All religions were to be respected. On the same date a treaty was signed authorizing Italy to take over the Albanian diplomatic services, with the result that all foreign legations at Tirana were closed. At the same time the new Albanian Premier petitioned Victor Emmanuel to incorporate the Albanian military forces in the Italian army. Another accord provided that Italians in Albania and Albanians in Italy were to enjoy the same civil and political rights as in their own countries. Meanwhile on April 14 Albania had followed Italy's example in resigning from the League of Nations.

Economic Co-ordination. The integration of Albanian economic resources and activities with those of Italy was accomplished by the accord signed April 20 at Tirana. This provided for an Italo-Albanian customs, monetary, and economic union. Under it the Italian tariff, import, and export restrictions and general system of foreign trade control were applied to Albania. The Tirana government undertook to facilitate Italian enterprises that served to develop Albania economically. Each country retained autonomy with respect to internal taxation, and existing production, import, export, and sales monopolies remained in force, subject to negotiation.

An exchange monopoly was set up in Albania and administered by the Albanian National Bank in conformity with Italian laws and regulations. The Albanian gold franc was pegged to the lire. Italian bank notes or credits of the Bank of Italy became coverage for the note circulation of the Albanian National Bank. The Italian customs service took over the administration and control of all customs operations in Albania. As compensation for the loss of customs revenue, the Italian Government obligated itself to pay the Tirana Government 15,000,000 Albanian francs (nearly \$5,000,000) annually, plus the amount by which

Albanian customs collections exceed 9,000,000 francs in any one year. Albania undertook to terminate all her commercial treaties and economic agreements with other countries as soon as legally possible and permit Italy to negotiate all future agreements and treaties of this nature.

To promote the economic development of the country the Italian Government in June appropriated 1,200,000,000 lire for land reclamation and 800,000,000 lire for road construction in Albania, to be expended over eight years. About 500,000 acres of seasonally flooded lands along the Adriatic coast were to be reclaimed. The highway system was to be extended, partly in order to promote economic development of the country. Plans were laid for Italian exploitation on a more intensive scale of Albanian mineral, water-power, forest, and agricultural resources. On October 11 the Italian Under-Secretary for Albanian Affairs reported that 25,000 natives and 1500 Italians were at work on motor roads, aqueducts, and port improvements in Albania.

Military Activities. The primary purpose of the new Albanian highway program was strategic. In June Marshal Pietro Badoglio, Chief of the Italian General Staff, was sent to Albania to transform it into a base for Italian military operations in the Balkans. He laid out the new highway system and organized the Italian army of occupation, reported in August to number about 90,000 men. The main troop concentrations were along the Greek frontier. The cost of Italian military activities was indicated by the decree of Apr. 9, 1939, appropriating 280,000,000 lire for the Ministries of War, Marine, and Aeronautics to cover military expenses in Albania during the fiscal year ended June 30, 1939.

Italian Methods of Control. According to the Balkan correspondent of the London *Times*, the Italians resorted to bribery and friendly treatment of those Albanians who did not resist invasion in order to consolidate their control. Cash gifts were distributed to Albanians joining the new Fascist party. All officers of the Albanian army and the higher government officials who co-operated with the invaders received a bonus of two months' salary. Wages of laborers were raised substantially through a minimum wage law. Upon orders from Mussolini, 190,000 gold francs were distributed among the poorer classes in Albania soon after the military occupation. The entire Albanian civil and diplomatic services, continued to draw their salaries, although they had little if any work to do. But despite Italian generosity, many Albanians appeared unreconciled to the loss of their national independence.

King Zog in Exile. On Apr. 4, 1939, three days before the Italian invasion, a son was born to King Zog and Queen Geraldine. The Queen and the infant Crown Prince were sent by automobile to Greece when the Italians landed, and the King later joined them there with a large suite. On May 3 they arrived in Istanbul, Turkey, and later in the year they settled in Stockholm, Sweden.

See GREAT BRITAIN, GREECE, ITALY, AND YUGOSLAVIA under *History*.

ALBERTA, ăl-bŭr'ta. A prairie province of western Canada. Area, 255,285 square miles; population (June 1, 1939 estimate), 789,000 compared with (1936 census) 772,782. Chief cities (1936 census figures in parentheses): Edmonton (85,774), Calgary (83,407), Lethbridge (13,523), Medicine Hat (9592). During 1938 there were 15,881 births, 5870 deaths, and 6973 marriages.

Education (1936-37): 178,507 students in elementary and secondary schools, and 2798 students of university grade.

Production. The gross value of agricultural production for 1938 was \$167,066,000. Crops produced in 1939 (1938 figures in parentheses) included wheat 145,000,000 bu. (143,000,000), oats 77,000,000 bu. (101,000,000), barley 25,000,000 (29,200,000), rye 2,891,000 bu. (2,700,000), flax-seed 300,000 bu. (250,000), hay and clover 549,000 tons (545,000), and sugar beets 270,000 tons (251,000). The total value of field crops in 1939 was \$114,017,000. Livestock in the province (1939): 1,337,400 cattle, 903,200 swine, 834,300 sheep, and 658,600 horses. Furs produced in 1936-37 totaled 2,068,118 pelts valued at \$2,161,507. The output of the forests in 1937 was equivalent to 105,646 M cu. ft. and the value of the products therefrom was \$3,196,988. Fish caught during 1938 were valued at \$492,900.

Mineral production (1938) was valued at \$28,966,272 of which coal (5,251,233 tons) accounted for \$13,698,470; crude petroleum (6,751,312 bbl.), \$8,775,094; natural gas (21,822,108 M cu. ft.), \$4,807,346. The 895 factories, with a total of 12,524 employees, had a net value of production of \$28,923,095 for 1937.

Government. For the fiscal year ended Mar. 31, 1939, revenue totaled \$24,269,817; expenditure, \$21,242,625; net public debt, \$125,917,194. The King is represented by a lieutenant-governor (appointed by the Governor General in Council) who is aided by a ministry of 8 members which is responsible to the legislature and resigns office when it fails to hold the confidence of that body. There are 63 members in the legislature (including the ministry) all elected by direct vote of the people (at the provincial general election of 1935, 56 Social Credit, 5 Liberal, and 2 Conservative members were elected). Six senators (appointed for life) and 17 elected commoners represent the province in the Dominion parliament at Ottawa. Lieut.-Gov., J. C. Bowen (appointed Mar. 20, 1937); Premier, William Aberhart (Social Credit).

History. An order in council issued by the Governor General in Council on Mar. 25, 1939, disallowed "An Act to amend the Limitation of Actions Act, 1935" which provided that actions on debts contracted before July 1, 1936, must be brought before July 1, 1940, unless the debtor enters into a new agreement in writing. On Sept. 12, 1938, a board was created for the establishment of credit houses in Alberta which now perform all the functions of commercial banks except the granting of loans. Total deposits are not very large but are expected to increase because 25 per cent of all provincial salaries are paid in transfer vouchers which can be negotiated only through credit houses and their merchant members. Deposits may be made either in currency or transfer vouchers. See CANADA.

ALBERT CANAL. See BELGIUM under *History*.

ALCOHOL. See ALCOHOLIC BEVERAGES; FEDERAL ALCOHOL ADMINISTRATION.

ALCOHOLIC BEVERAGES. According to the report of the Commissioner of Internal Revenue, the total United States production of distilled spirits for the fiscal year ending June 30, 1939, was 145,326,176 tax gallons, a decrease of 3.2 per cent from 1938. This figure included by kinds: whisky, 93,003,917 tax gallons; rum, 2,442,689; gin, 6,279,119; and brandy, 27,446,296.

Brandy production was almost 5,000,000 tax gallons higher than in 1938, but whisky production was reduced by 9.6 per cent. On June 30, 1938, the stocks of whisky two years old or older amounted to 170,131,686 tax gallons, whereas on June 30, 1939, similar stocks had increased to 297,106,761 tax gallons.

During the year 43,401,295 proof gallons of rectified products were produced, including whisky, 33,593,409; gin, 7,231,564; cordials and liqueurs, 2,192,964. This represented a decrease of approximately 150,000 gallons from the figure for the preceding year. The quantity of whisky rectified showed an increase, but rectified gin production declined more than 500,000 proof gallons.

Production of fermented malt liquors totaled 53,870,553 bbl. (of 31 gal.), a decrease of 4.4 per cent from 1938. Still wine production was the greatest of any fiscal year, 231,959,287 wine gallons. Production of cereal beverages was 1,966,795 gallons; sparkling wine, 6,683,762 half-pint units; vermouth, 206,184 wine gallons. The consumption of domestic sparkling wine decreased by 12.3 per cent.

In the production of distilled spirits during the year, distillers utilized 1,327,113,343 lb. of grain, 4,314,729 gal. of molasses, 42,224,939 lb. of fruit, and 170,863,640 gal. of fruit wine, cider, and juice. The year's production of fermented malt liquors required 1,938,177,252 lb. of malt; 415,689,330 of corn; 198,317,295 of rice; 150,765,190 of sugar and sirups, and 32,462,163 of hops and hop extract.

No figures are available, of course, on illicit liquor production. During the fiscal year, 12,059 stills were seized, having an aggregate mash capacity of 1,895,277 gal. and in connection therewith 8,076,461 gal. of mash were seized and destroyed. The investigators also seized 336,268 gal. of spirits and 4556 automobiles and trucks. The total appraised value of the property seized amounted to \$2,222,899. A total of 28,844 persons were arrested. See FEDERAL ALCOHOL ADMINISTRATION.

ALEXANDRETTA, SANJAK OF. See SYRIA AND LEBANON and TURKEY under *History*.

ALFALFA. See HAY.

ALGERIA. A French colony in North Africa, with an area of 847,870 square miles, of which all except 222,206 square miles are desert. Capital, Algiers (Alger). Estimated population, Jan. 1, 1938, 7,400,000. At the 1936 census there were 7,234,684 inhabitants (6,592,033 in the Northern Territory and 642,651 in the Southern Territory). The total European population was 987,252, of whom 853,209 were French citizens and 134,043 foreigners. The native population, entirely Moslem, numbered 6,247,432. Populations of the chief cities (1936) were: Algiers, 264,232; Oran, 200,671; Constantine, 113,777; Bona (Bône), 86,332; Philippeville, 66,112; Sidibel-Abbes, 54,754. For non-Moslem education, there were in 1937 128 infant schools, with 21,327 pupils; 1210 primary schools, with 157,088 pupils; 29 higher primary schools, with 8864 pupils; 17 secondary schools, with 13,517 pupils; and a university at Algiers, with 2224 students. For Moslem education, there were 681 schools, with 73,023 pupils.

Production. Agriculture and stock raising are the chief occupations. Yields of the chief cereal crops in 1938 were (in metric tons): Wheat, 951,000; barley, 581,100; rye, 1100; oats, 158,100; corn, 4300. The olive oil output in 1938-39 was 5900 metric tons; potatoes (1938), 145,300; tobacco, 19,100; wool and mohair, 7400; wine, 21,-

490,000 hectoliters (hectoliter equals 26.42 U.S. gal.). Livestock in 1938 included 5,965,000 sheep, 2,737,000 goats, 181,000 horses, 319,000 asses, 789,000 cattle, 182,000 mules, and 170,000 camels. The fish catch in 1936 was valued at 51,750,000 francs. Exports of the principal minerals in 1938 were (in metric tons): Iron ore, 2,754,614; antimony, 14,194; phosphate rock, 485,579; zinc ore, 8327; lead, 8860.

Foreign Trade. Imports in 1938 totaled 4,666,565,000 francs (4,083,383,000 in 1937); exports, 5,649,701,000 francs (4,333,599,000). Over 80 per cent of both the import and export trade was with France. Average exchange value of franc, \$0.029 in 1938, \$0.04 in 1937. See IMPORTS AND EXPORTS.

Finance. The 1939 budget estimates placed total revenues at 2,673,296,207 francs (ordinary, 1,910,051,207); expenditures, 2,673,073,306 francs (ordinary, 1,909,828,306).

Transportation, etc. The 3048 miles of railway line open for traffic in 1937 carried 748,000,000 ton-kilometers of goods and earned a gross income of 279,535,227 francs. Air lines connect Algiers with Oran, Tunis, Marseille (France), Brazzaville (French Congo), and Elizabethville (Belgian Congo). The net tonnage of vessels cleared from Algerian ports in 1938 was 7,164,000; tonnage entered, 7,920,000. See ROADS AND STREETS.

Government. Administration is centralized in the hands of the Governor-General appointed by the French Government, with the exception of the non-Moslem services which are administered by the appropriate Ministries at Paris. The departments of Algiers, Oran, and Constantine in Northern Algeria are represented in the French Parliament by a total of 10 deputies and 3 senators. Southern Algeria has a French military government. Governor-General in 1939, M. Le Beau, appointed Sept. 21, 1935.

History. The nationalist agitation in Algeria and the other French North African possessions was largely suspended during 1939 as a result of the European crises and the overwhelming support which native Moslems accorded France in her quarrel with Italy and her war with Germany. The crisis of September, 1938, over Czechoslovakia brought professions of loyalty to France from the entire Moslem population. This sentiment was greatly reinforced by the Italian claims to Tunisia made in December, 1938, and the subsequent visit of Premier Daladier to North Africa early in January, 1939. He was received with warm acclaim by all sections of the native population, which displayed deep resentment at the Italian imitation of the Nazi racial policy and at the reported ousting of Moslems from their lands in Italian Libya (q.v.) to make room for Italian settlers.

Italy's annexation of Moslem Albania in April, 1939, aroused great indignation in French North Africa, expressed in large protest meetings in Constantine, Oran, Bona, Philippeville, and other cities and towns. The Moslem chiefs and religious leaders of Algeria, Tunisia, and Morocco, in their annual meeting late in April, passed a resolution affirming loyalty to France and denouncing "the despotic ambition of one [Mussolini] who has dared, with a theatrical gesture, to describe himself as the Protector of Islam."

Throughout the year the French authorities pushed their preparations to defend the North African colonies against a threatened Italian drive from Libya and a possible attack from

Spanish Morocco. Work was rushed on the construction of the naval and air base at Mers-el-Kebir near Oran, and the strengthening of the Mareth line of fortifications guarding the Tunisia-Libya frontier. The garrison of Algeria and Tunisia, which totaled 83,000 men and 3000 officers in 1937, was greatly reinforced. See FRANCE and ITALY under *History*.

ALIENS. See IMMIGRATION AND EMIGRATION.

ALLEGHENY COLLEGE. A coeducational institution of higher learning in Meadville, Pa., nonsectarian in policy but under the patronage of the Methodist Church; founded in 1815. The enrollment for the autumn of 1939 was 711 in addition to 108 in the evening session and for the summer session 123. The faculty numbered 51 members. The productive funds of the college amounted to \$1,500,000, and the income for the year 1937-38 was \$484,000. The Reis Library contained 130,000 volumes. President, William P. Tolley, Ph.D., D.D., Litt.D., LL.D.

ALLIANCE FRANÇAISE, FÉDÉRATION DE L'An association of clubs and groups, formed in 1902 for the purpose of encouraging and furthering the study and cultivation of the French language, literature, art, and history in the United States and Canada. By 1939 it comprised more than 290 local branches, including alliances, affiliated societies, and clubs in universities, colleges, and schools.

Each year the Alliance Française brings from France one or more lecturers who are prepared to speak before all the affiliated societies and clubs wishing to hear them. The official lecturer for the season 1938-39 was Mr. Henri Molherbe, novelist, lecturer, and authority on music. The regional lecturers were Messrs. Jean Albert Bédé and Paul Périgord. The Fédération also organizes lecture tours for distinguished French travelers and French lecturers who live in America, assists in organizing courses in the French language and literature in co-operation with the leading universities, and encourages its groups to engage in dramatic performances and debates in French. Its Assemblée Générale, attended by representatives of the various groups, was held in New York City, Apr. 15, 1939. The official periodical is *L'Echo de la Fédération*.

The officers in 1939 were: President, Frank D. Pavey; general vice president, Roger Sherman; president of the executive committee, Albert Blum; treasurer, John F. Daniell; general secretary and director of lectures, Pierre A. Bédard. Headquarters: 22 East 60th St., New York City.

ALSACE-LORRAINE. The provinces transferred from Germany to France, as from the date of the Armistice of Nov. 11, 1918, by the Treaty of Versailles (June 28, 1919). They are now known as the Bas-Rhin, Haut-Rhin, and Moselle departments of France. Total area, 5605 square miles; total population (1936 census), 1,915,627. See FRANCE under *History*.

ALUMINUM. This metal is widely distributed in the Earth's crust, but mineral deposits of economic value are limited in geographical occurrence. France is the largest producer of bauxite, the principal ore, with Hungary, Yugoslavia, Italy, Surinam, and British Guiana following in that order. The chief sources of bauxite in the United States are the States of Alabama, Arkansas, and Georgia. Shipments from these States in 1939 totalled 369,000 long tons valued at \$2,174,000, an increase of 19 per cent in quantity and 20 per cent in value compared with 1938.

In the production of aluminum, however, Germany took first place in 1938, United States second, Canada third, and Russia fourth. In 1938 the world industry set an all-time record production of 633,650 tons of aluminum, exceeding the 1937 record by nearly 20 per cent. World production for 1939 is estimated at 686,500 tons, United States production being about 163,500 tons.

Because of their strength and lightness aluminum alloys are widely used in the manufacture of aircraft, automobiles, and other forms of transport, mine skips, and cages. The importance of aluminum in the manufacture of aircraft led the United States in December to lay a "moral embargo" on exports of the metal to those countries engaging in "unprovoked bombing and machine gunning of civilian populations."

Open market price for carload lots of virgin aluminum ingots in New York remained uniform at 20¢ per lb. in 1939 and 1938.

In December, 1939, the Aluminum Company of America, largest domestic producer, announced the signing of a contract with the Bonneville Power Administrator for a substantial block of power for the production of 30,000,000 lb. of aluminum annually at a new plant to be constructed near Vancouver, Wash. Combined with the company's four existing plants, this will bring its total productive capacity to more than 400,000,000 lb. per annum. The company reported that its total sales volume in 1939 was the largest in its history. See METALLURGY.

H. C. PARMELEE.

AMATEUR ATHLETIC UNION OF THE UNITED STATES. An organization formed in 1888 and for the improvement and promotion of athletic sports and games among all amateurs. Its unit of organization is the athletic club, educational institution or other bona fide amateur athletic organization. The Union recognizes all amateur sports and claims jurisdiction over the following classes: All track and field events, basketball, boxing, gymnastics, handball, swimming, tug of war, wrestling (catch-as-catch-can and Greco-Roman), weightlifting, volley ball, indoor baseball, code ball, field handball, bob sleighing and coasting, ice hockey, and horseshoe pitching.

Membership in the A.A.U. is limited to bona fide clubs, educational institutions or other organizations of a permanent character actively promoting and (or) participating in amateur sports and games. No organization whose interest in amateur sports is purely commercial is eligible for membership and any income derived from the promotion of any sport by members of the A.A.U. must be used for the further promotion of amateur sport, for an approved charity or for the general welfare of the organization as a whole. Club members of associations pay yearly dues of \$7.50 of which \$2.50 goes to the national body.

The Union sponsors championship meets in the various sports over which it has jurisdiction, has taken the lead in America's participation in the Olympic Games, and has been instrumental in organizing the Public Schools Athletic League of New York and similar leagues in other sections of the country. It publishes an official monthly, *The Amateur Athlete* and issues *Official Athletic Rules and Official Handbook of the Amateur Athletic Union of the United States*.

The officers in 1939 were: President, Samuel

E. Hoyt; secretary-treasurer, Daniel J. Ferris. Headquarters: 233 Broadway, New York, N. Y.

AMBASSADORS AND MINISTERS. The accompanying table lists the diplomatic representatives accredited to and from the United States, as reported in the Department of State's *Diplomatic List* for December, 1939, and *Foreign Service List* for the last quarter of 1939. The abbreviations following the names are to be interpreted as follows: (A), Ambassador extraordinary and plenipotentiary; (E), Envoy extraordinary and minister plenipotentiary; (C), Consul general.

over the preceding year. This total membership represents a gain of 1,566,299 dues-paid members since 1936 when the ten international unions which formed the C.I.O. were suspended. The substantial membership gains which have been made during this period were due largely to intensive organizing campaigns and the economic enfranchisement of American workers under the National Labor Relations Act. This enlargement, with its widespread broadening of collective bargaining, was achieved in the face of opposition from many employers and bitter rivalry from the C.I.O.

DIPLOMATIC REPRESENTATIVES BETWEEN THE UNITED STATES AND FOREIGN COUNTRIES, 1939

To the United States		From the United States	
Argentina	Don Felipe A. Espil (A)	Norman Armour (A)	
Belgium	Count Robert van der Straten-Ponthoz (A)	Joseph E. Davies (A)	
Holivia	Don Luis Fernando Guachalla (E)	Douglas Jenkins (E)	
Brazil	Carlos Martins (A)	Jefferson Caffery (A)	
Bulgaria	Dimitri Naoumoff (E)	(E)	
Canada	Loring C. Christie (E)	(E)	
Chile	Don Alberto Cabero (A)	Claude G. Bowers (A)	
China	Hu Shih (A)	Nelson T. Johnson (A)	
Colombia	Gabriel Turbay (A)	Spruille Braden (A)	
Costa Rica	Don Ricardo Castro Beeche (E)	William H. Hornbrook (E)	
Cuba	Pedro Martinez Fraga (A)	J. Butler Wright (A)	
Czechoslovakia	Vladimír Hurban (E)	Irving N. Linnell (C)	
Denmark	Henrik de Kauffmann (E)	Ray Atherton (E)	
Dominican Republic	Don Andrés Pastoriza (E)	R. Henry Norweb (E)	
Ecuador	Capitán Colón Eloy Alfaro (E) *	Boaz Long (E)	
Egypt	Mahmoud Hassan Bey (E)	Bert Fish (E)	
El Salvador	Don Hector David Castro (E)	Robert Frazer (E)	
Estonia	Johannes Kaiv (C) *	John C. Wiley (E)	
Finland	Hjalmar J. Procopé (E)	H. F. Arthur Schoenfeld (E)	
France	Count de Saint-Quentin (A)	William C. Bullitt (A)	
Germany	Hans Heinrich Dieckhoff (A) *	(A)	
Great Britain	Marquess of Lothian (A)	Joseph P. Kennedy (A)	
Greece	Demetrios Sicilianos (E)	Lincoln MacVeagh (E)	
Guatemala	Don Adrian Recinos (E)	Fay A. Des Portes (E)	
Haiti	Elie Lescot (E)	Ferdinand L. Mayer (E)	
Honduras	Don Julian R. Caceres (E)	John D. Erwin (E)	
Hungary	John Pelényi (E)	John Flournoy Montgomery (E)	
Iran	Ali Akdar Dalfary *	Louis G. Dreyfus, Jr. (E)	
Ireland	Robert Brennan (E)	John Cudahy (E)	
Italy	Ascanio dei principi Colonna (A)	William Phillips (A)	
Japan	Kensuke Horinouchi (A)	Joseph C. Grew (A)	
Latvia	Alfred Bilmanis (E)	John C. Wiley (E)	
Lithuania	Povilas Zadeikis (E)	Owen J. C. Norem (E)	
Mexico	Don Francisco Castillo Nájera (A)	Josephus Daniels (A)	
Netherlands	A. Loudon (E)	George A. Gordon (E)	
Nicaragua	Don León De Bayle (E)	Meredith Nicholson (E)	
Norway	Wilhelm Munthe de Morgenstjerne (E)	Mrs. Florence Jaffray Harriman (E)	
Panama	Don Augusto S. Boyd (A)	William Dawson (A)	
Paraguay	Horacio A. Fernández (E)	Findley B. Howard (E)	
Peru	Don Manuel de Freyre y Santander (A)	(A)	
Poland	Count Jerzy Potocki (A)	Anthony J. Drexel Biddle, Jr (A)	
Portugal	João Antonio de Bianchi (E)	Herbert Claiborne Pell (E)	
Rumania	Radu Irimescu (E)	Franklin Mott Gunther (E)	
Spain	Don Juan Francisco de Cárdenas (A)	Alexander W. Weddell (A)	
Sweden	W. Boström (E)	Frederick A. Sterling (E)	
Switzerland	Charles Brugmann (E)	Leland Harrison (E)	
Thailand (Siam)	Phya Abhihil Rajamaitri (E)	Edwin L. Neville (E)	
Turkey	Mehmet Münir Ertegün (A)	John Van A. MacMurray (A)	
Union of South Africa	Ralph William Close (E)	Leo J. Keena (E)	
U.S.S.R.	Constantine A. Oumansky (A)	Laurence A. Steinhardt (A)	
Uruguay	J. Richling (E)	Edwin C. Wilson (E)	
Venezuela	Don Diógenes Escalante (A)	Frank P. Corrigan (A)	
Yugoslavia	Constantin Fotitch (E)	Arthur Bliss Lane (E)	

* Holds the rank of ambassador for the duration of the Ecuador-Peru boundary dispute. * Acting. * Absent. * Counselor and Chargé d'Affaires ad interim.

AMERICAN ASSOCIATIONS AND SOCIETIES. For various scientific and other organizations, whose official titles begin with the word American, see under the important descriptive word of the title, except in the cases of AMERICAN FEDERATION OF LABOR and AMERICAN LEGION.

AMERICAN DEMOCRACIES, INTERNATIONAL CONGRESS OF. See DEMOCRACY.

AMERICAN FEDERATION OF LABOR. The American Federation of Labor in 1939 achieved the peak membership in its fifty-nine year history. The dues-paid membership as of August, 1939 was 4,006,354, a gain of 383,267

With its increased economic power, the American Federation of Labor through its affiliated unions was able during the year to maintain and improve wage levels while steadily reducing the hours of work per week.

The great majority of A. F. of L. unions enjoy contractual relations with employers in their respective trades and the provisions of these contracts were lived up to by the unions. There was not a single major strike conducted by a national or international union affiliated with the American Federation of Labor in 1939. This is a remarkable record and attests to the efficacy of collective bargaining. Such strikes as did occur in

1939 involving A. F. of L. unions were local in character and did not tend to dislocate industry or retard national recovery. See LABOR CONDITIONS; RELIEF.

Legislation Favored. In the field of legislation organized labor made some gains during 1939 but also suffered serious reverses. Congressional action at the last session favored by labor included:

1. Amendments to the Social Security Act providing for liberal pensions for several groups, advancing for two years date when old age pensions will take effect, adding approximately 1,000,000 persons to those already covered, and maintaining for the next three years the 1 per cent employee-employer old-age pension tax.
2. Appropriation of \$50,000 for the Civil Liberties Committee to complete investigations on the west coast.
3. Beneficial amendments to Employers' Liability Act of 1908 applicable to railroad men and seamen.
4. Amendments to naturalization law enabling a person to qualify for citizenship who entered the United States prior to July 1, 1924, even though there is no record of permanent admission.
5. Extending to Dec. 31, 1940, the time in which Filipinos will be provided free transportation to their native land.
6. Appropriation of \$1,200,000 for Wage and Hour Administration after the House refused any appropriation.
7. Appropriation of approximately \$2,000,000,000 for national defense.
8. Appropriation of \$1,477,000,000 for relief.
9. Postal substitutes granted vacation and sick leave.
10. Government employees who work a five-day week have heretofore had Saturdays counted in their leaves. Hereafter Saturdays, Sundays, and holidays will not be counted in their annual and sick leaves.
11. Providing for the payment of pensions to beneficiaries after the death of a government employee.
12. Extending the life of the C.C.C. until July 1, 1943.
13. Requiring shipowners to deposit such portions of a seaman's wages as may be stipulated, in a savings bank or a United States postal savings depository.
14. Load lines made applicable to foreign-going American vessels of 150 tons or over.
15. Secured amendment to bill enlarging Panama Canal to provide all positions (approximately 3000) of skilled, technical, clerical, administrative or supervisory class be filled by citizens of the United States.
16. Secured passage of bill to permit appointment of midshipmen to the Naval Academy from sons of civilian employees of the government in the Canal Zone.
17. Appropriation of \$1,325,000 for the purchase of surplus products of the fishing industry to be distributed to persons on relief.
18. Permitting Home Owners Loan Corporation to extend amortization of loans from 15 to 25 years.
19. Defeated provision in the National Defense Act providing that the manufacture of educational airplanes would not come under the Walsh-Healey Act which would permit the employment of cheap and incompetent labor.
20. Defeated amendments to Wage and Hour Law that would have exempted more than 2,000,000 workers from its provisions.
21. Defeated bills that would permit certain Asiatics ineligible to citizenship to be naturalized, which if they became laws would have ultimately opened our ports to nationals of all Asiatic countries now denied admission for permanent residence.

Legislative Reverses. Labor reverses in Congress were:

1. Elimination of the prevailing wage clause from the relief program.
2. Failure to take action upon amendments proposed by the American Federation of Labor for improving the administration of the National Labor Relations Act.

Additional reverses were experienced in State legislatures. Repressive labor legislation and amendments restricting and limiting existing labor laws were adopted in several States and proposed in many others. This reactionary trend was directly traceable to resentment against sit-down strikes and other similar activities.

Finances. The American Federation of Labor held its Fifty-ninth Annual Convention in Cincinnati, Ohio, Oct. 2-14, 1939. To this Convention Secretary-Treasurer Frank Morrison submitted his annual financial report. It showed that the

total revenue of the American Federation of Labor for the fiscal year ended Aug. 31, 1939 was \$1,800,249. This sum, added to a balance of \$443,631 from 1938 brought the total funds on hand during the year to \$2,243,880. Total expenditures for the year were \$1,697,376, leaving a balance on hand on Aug. 31, 1939 of \$546,504.

The revenue of the American Federation of Labor is chiefly derived from a per capita tax of one cent per member per month, paid to the Federation by its affiliated unions. In addition, a special assessment of the same amount was levied during 1939 for the purpose of raising funds to expand organizational campaigns. During the twelve months ended Aug. 31, 1939 the American Federation of Labor spent \$889,549 for organizing activities. The complete financial report for the year is a public document which can be obtained at the Secretary-Treasurer's office of the American Federation of Labor.

Affiliations. The American Federation of Labor in 1939 embraced 105 national and international unions having 33,744 local unions; 49 State Federations of Labor (including Puerto Rico); 806 City Federations of Labor; 4 Departments with 942 local departmental councils, and 1563 local trade and federal labor unions not affiliated with any national or international union but directly affiliated with the American Federation of Labor.

During the year charters were issued to two new international unions. These were the United Cement, Lime, and Gypsum Workers and the Seafarers International Union of North America. In addition two international unions which had left the American Federation of Labor to join the C.I.O. in 1935, returned to the fold. These were the United Textile Workers of America and the United Automobile Workers of America.

National Convention. Every issue of interest to organized labor was discussed, considered, and voted upon at the Convention.

Perhaps the most important problem taken up at the Convention was the question of labor unity. The Executive Council of the American Federation of Labor reported to the convention on the status of the peace negotiations with the C.I.O. The report declared the negotiations were terminated on April 5 by John L. Lewis of the C.I.O. and that he refused to continue them afterward. The Council concluded:

The facts set forth in this report are supported by the records which have been made. We must leave to the honest, sincere, and calm determination of the membership of the American Federation of Labor and of working men and women of the nation, the question as to who is responsible for the origination of the division within the ranks of labor and for its continuation in a most aggravated and destructive form.

Our committee still stands, clothed with authority to function, ready to resume negotiations when it is accorded an opportunity to do so. We have opened the door of the American Federation of Labor wide and completely. We have invited those who left the American Federation of Labor to return. We have urged them to come back home and settle differences within the family of labor in a sensible, honest, and fair way. In doing this we have been inspired by a genuine desire to establish here in America a solid, united labor movement through which the economic, social, and industrial interests of the workers of the nation can be fully and completely served.

President Franklin D. Roosevelt addressed a letter to the Convention urging the desirability of labor peace. A prompt reply was sent to the President informing him the American Federation of Labor's committee stood ready to resume negotiations whenever it was accorded an opportunity to do so. The Convention adopted a

resolution fully supporting the position of the Executive Council on this important issue.

The text of this declaration follows:

Your committee has had before it for consideration the letter addressed to this convention by the President of the United States, in which he urged the American Federation of Labor to again meet with representatives of the C.I.O. for the purpose of endeavoring to bring unity in the American trade union movement.

We also have the reply made to that communication by the President of the American Federation of Labor.

It was impossible for your committee to consider these two important communications without keeping in mind the detailed and historic record covering the efforts of the American Federation of Labor from the beginning to bring unity into effect.

The record presented to this convention by the Executive Council of the American Federation of Labor is exhaustive. It is a record of the facts, a record which indicates that from the time the C.I.O. was organized, continuous efforts were made by the American Federation of Labor to heal the breach.

The record indicates that before the President of the United States took official notice of the breach, a conference was held between duly appointed representatives of both organizations, and that the conference referred to was able to reach an agreement as to the principle involved in establishing unity, and the methods by which those principles could be applied.

The record further indicates that after the representatives of the C.I.O. had agreed on these principles and methods, that they were vetoed by the Chairman of the C.I.O., his action, in substance, being a repudiation of what his own representatives had agreed to.

The President of the United States appealed to the Houston Convention last year to take immediate steps to heal the breach which existed, a similar communication being sent to the representatives of the C.I.O.

The Convention by a unanimous vote complied with the President's request.

Although the American Federation of Labor placed itself publicly on record as favoring a conference with the representatives of the C.I.O., the response from that organization was the immediate calling of a conference in Pittsburgh, Pa., for the purpose of setting up a permanent established C.I.O. movement.

On Feb. 23, 1939, the President of the United States addressed a letter to the President of the American Federation of Labor and the Chairman of the C.I.O., calling attention to the necessity for unity in the American trade union movement, and urging that peace conferences between the two organizations be resumed.

As a result duly appointed representatives of both organizations did meet, their conferences adjourning so that the Chairman of the C.I.O. could give his attention to negotiations between the United Mine Workers of America and Coal Operators.

Conferences were postponed upon the request of the Chairman of the C.I.O. and with the definite understanding that they would be resumed, and that he would notify the representatives of the A. F. of L. immediately it would become possible for him to take part.

Although the committee of the A. F. of L. has held itself in readiness, it has failed to receive any further information as to when the conferences would take place.

On the other hand, public announcement was made in the interim by the Chairman of the C.I.O. that peace as such was secondary to the objectives of that organization.

Shortly after, in a communication addressed to officials of the C.I.O. reporting on the meeting of its Executive Board, he wrote:

"Among many problems discussed at length was the question of unity, and it has been clearly demonstrated that peace within the A. F. of L. is impossible except upon their terms and conditions. This would mean the stripping of many of our new unions and the abandonment of organizing the unorganized in industrial unions. This the C.I.O. will not do."

This communication was shortly followed by another public statement announcing the determination of the C.I.O. to invade the jurisdiction of the building trades, thus clearly indicating that instead of considering peace negotiations the C.I.O. was arbitrarily preparing for an intensified campaign of antagonism.

In full appreciation of the President's efforts to be helpful in bringing unity within the American trade union movement and appreciative of the efforts which he has made, we submit that the record from the time the C.I.O. was organized contains continuous efforts on the part of the American Federation of Labor to make unity a fact, that all of these efforts have been thwarted by the Chairman of the C.I.O.

We recognize that under the unhappy condition created by the division in the ranks of labor, it was appropriate that the President of the United States should address a similar appeal to both organizations.

Your committee calls attention to the fact that further appeals would be more fittingly directed to the C.I.O. for from the inception of the C.I.O. the American Federation of Labor has been ready and most willing to confer with representatives of the C.I.O. so that unity could be established, and your committee is of the conviction that this will continue to be the policy of the American Federation of Labor.

Your committee read with approval President Green's reply to the President of the United States and recommends that this communication receive the approval of the convention.

After the Convention the President of the United States made a personal plea to the President of the American Federation of Labor and to John L. Lewis as President of the C.I.O. for the resumption of peace negotiations. Mr. Green told the President at the White House that the American Federation of Labor committee was ready and willing to meet with representatives of the C.I.O. at any time to negotiate peace. It must be assumed that the leader of the C.I.O. refused the President's petition because no information that the C.I.O. representatives were willing to meet with those from the A. F. of L. had been received by the close of the year.

Another vital subject considered at the Convention was the formulation of labor's policy toward the war in Europe. The Convention adopted a strong stand for strict neutrality of the United States. At the same time the Convention demanded adequate labor representation on any governmental agency assigned to the task of drafting emergency mobilization plans. This declaration follows:

In such legislation as has come to our notice which has been prepared for enactment by Congress should a national war emergency arise, we are not aware of any provisions assuring labor of adequate representation.

We note with regret that in the administrative appointment of the War Resources Board no representative of the American trade union movement was included. Perchance that board was not created to consider and report upon facts and policies which directly included labor.

In all national emergencies the people as a whole are involved, and it should be mandatory that where a people are involved the principle of adequate representation should be observed. Labor because it is the most numerous; labor because it is one of the essential factors of defense; labor, which always must bear the greater burden, should be represented upon every national board, committee, commission or other federal body created having to deal with any phase of labor conditions during a period of national emergency. Failure to give labor such representation would be sufficient reason to cause the gravest doubts in labor's minds.

Other important actions by the Convention included:

1. It denounced the philosophies of Communism, Nazism, and Fascism and the aggressive, brutal policies of European dictators.

2. It reaffirmed the Federation's economic boycott against Nazi Germany and voted to impose a similar boycott on goods and services from Soviet Russia.

3. It called upon all affiliated unions to bar Communists from membership.

4. It adopted resolutions urging all affiliated unions to abjure any discrimination against workers because of race, color or creed.

5. It voted to support the Federation's amendments to the National Labor Relations Act, introduced at the 1939 session of Congress by Senator Walsh of Massachusetts and Representative Barden of North Carolina. This resolution placed particular emphasis on the amendment calling for a complete housecleaning of the members and staff of the National Labor Relations Board.

6. It reaffirmed the non-partisan political pol-

icy of the American Federation of Labor, calling for support of labor's friends and defeat of labor's enemies at the polls irrespective of party lines.

7. It recommended legislation broadening the scope of the Social Security laws and State legislation raising the standards of unemployment compensation.

8. It recommended the adoption of a national health insurance program as part of the Social Security system.

9. It called upon Congress to restore the prevailing wage principle in relief legislation.

Officers. Frank Morrison, Secretary-Treasurer of the American Federation of Labor, who had served in that capacity for 43 years, announced his retirement to the convention. He was elected Secretary-Treasurer emeritus for life at an annual salary of \$6000.

The convention elected the following officers of the American Federation of Labor for the year 1940: President, William Green; Secretary-Treasurer, George Meany; Vice-Presidents, William L. Hutcheson, T. A. Rickert, Matthew Woll, John Coefield, Arthur O. Wharton, Joseph N. Weber, G. M. Bugniazet, George M. Harrison, Daniel J. Tobin, Harry C. Bates, Edward J. Gainor, W. D. Mahon, Felix H. Knight, George E. Browne, Edward Flore.

WILLIAM GREEN.

AMERICAN LABOR PARTY. See COMMUNISM.

AMERICAN LAW INSTITUTE. See LAW.

AMERICAN LEGION, THE. An organization of World War veterans, chartered by Congress in 1919. Its purpose, stated in the preamble of its constitution, is "to uphold and defend the Constitution of the United States; to maintain law and order; to foster and perpetuate a 100 per cent Americanism; to preserve the memories and incidents of our association in the Great War; to inculcate a sense of individual obligation to the community, state, and nation; to combat the autocracy of both the classes and the masses; to make right the master of might; to promote peace and good will on earth; to safeguard and transmit to posterity the principles of justice, freedom, and democracy; to consecrate and sanctify our comradeship by our devotion to mutual helpfulness."

The Legion's 21st national convention was held in Chicago, Ill., Sept. 25 to 28, 1939. There were 1405 accredited delegates in attendance, representing every State, the District of Columbia, the departments of Alaska, France, Hawaii, Italy, Canada, Mexico, Panama, Puerto Rico, and the Philippine Islands outside the continental limits of the United States, and six outlying posts not attached to a department: China Post No. 1; Athens, Greece, Post No. 1; Tripolis, Greece, Post No. 2; Patras, Greece, Post No. 3; Brussels, Belgium, Post No. 1, and Guam Post No. 1. Approximately 250,000 Legionnaires, their families, and friends, attended the convention which reached its peak, Tuesday, September 26, with a 12-hour and 25-minute parade up Michigan Avenue and through Soldier Field by 100,000 marchers, 84 bands, 228 drum and bugle corps, 100 floats, and 50 engines and box cars, before at least 1,000,000 spectators, making this one of the greatest of all parades in Chicago history. Boston, Mass., was selected for the 22nd national convention, to be held Sept. 23 to 26, 1940.

The National Executive Committee at its meeting in Indianapolis, Nov. 23 and 24, 1939, designated the major national legislative program of The American Legion during 1940 to be: 1) government protection for World War widows and orphans; 2) an adequate national defense; 3) Universal Service in time of war; 4) effective veterans' preference in all government jobs; 5) tightening of immigration, naturalization, and deportation laws.

The major accomplishments of 1939 were in the fields of Americanism, child welfare, rehabilitation, legislation, and membership.

Americanism. Twenty-five Boys' States were conducted in 24 departments, with 10,959 boys enrolled. In these, boys are taught the practical theory of American self-government by having them organize a mythical 49th State. Participants go through the entire process of government from formation of political parties to elections, install their officers from governor to constables, enact and enforce their laws, and operate their boy State as adult citizens do in real life, to get accurate knowledge about their future citizenship obligations and responsibilities. Approximately 500,000 boys under 17 enrolled in the 13th annual Junior Baseball national tournament, forming approximately 25,000 teams which engaged in elimination play ending in a junior world's series. Omaha, Nebraska, Post 1, largest American Legion post, sponsored the winning team. There were 2938 Scout troops sponsored, making The American Legion the second largest individual troop sponsor. A national high school oratorical contest was held in which 24,000 students in 21 States participated. The winner was Fletcher Padgett, Jr., 17, of Saluda, S. C. He was awarded a 4-year university scholarship worth \$4000, good at any school of his choice. A similar prize will be awarded during 1940 and already 32 departments have indicated they would participate. The Legion expended \$10,000 on a series of highway safety recordings for use over more than 300 radio stations in waging war on "sudden death." The Dies Congressional Committee to investigate un-American activities was given support (see under *Legislation*, below). The American Legion-sponsored American Education Week, Nov. 4 to 11, 1939, drew millions of parents to visit the nation's public schools. The theme for the 1940 observance of this week, November 10 to 16, will be "Education for the Common Defense."

Child Welfare. Continued success in the national child welfare programme was recorded during 1939 with the co-operation of the departments, posts, Auxiliary, Forty and Eight, Eight and Forty. Approximately 30,000 volunteers carried on the work. During the year incomplete reports showed expenditures, in part from The American Legion's own resources, and in part from outside sources, of the known total of \$3,757,865 in emergency financial aid to 442,489 needy children; \$1,968,632 came from various American Legion resources and those of its affiliated organizations, and \$1,789,232 represented local and government benefits obtained through Legion efforts. Most of this money went for food, clothing, and medical treatments for needy children. A portion of the Legion's \$5,000,000 endowment fund income was appropriated for child welfare relief in families of World War veterans. Administrative expenses were paid from dues of members.

Rehabilitation. During the fiscal year ending June 30, 1939, the National Rehabilitation Com-

mittee, without cost to the beneficiaries, obtained for World War veterans and their dependents, the total of \$3,311,475 in recoveries for adjusted compensation, emergency officers' retirement pay, government insurance, disability, death, burials, and other benefits. During the same period the Committee received 152,987 letters from World War veterans in connection with claims of all kinds. The Committee reported there was a grand total of 85 hospital facilities in operation under the Veterans Administration and that as of June 30, 1939, there were 61,780 World War veterans receiving treatments there. The Committee presented an estimate that for the calendar year of 1940 the total of surviving World War veterans is 4,041,000 of whom 11,068 will be between 35 and 39 years of age; 1,304,669 between 40 and 44; 1,823,976 between 45 and 49; 753,698 between 50 and 54; 86,584 between 55 and 59; 39,296 between 60 and 64; 14,287 between 65 and 69; 5,501 between 70 and 74; 1,598 between 75 and 79; 303 between 80 and 84; 36 between 85 and 89; and 4 between 90 and 94.

Legislation. Legislation obtained increased government compensation for World War widows and orphans, and reduced eligibility requirements for same. Signal progress was also made toward the ultimate objective of adequate national defense. Progress towards tightening immigration, naturalization, deportation laws was achieved. Extension of the Dies Congressional Committee investigation for another year, and appropriation of \$100,000 for its expenditures were approved by House of Representatives February 3 by a vote of 344 to 35.

Membership. For the third consecutive year it was the second best membership year in the history of The American Legion and of its four affiliated organizations. On December 31 there were 1,032,597 members in The American Legion. This was an increase over 1938 of 60,982. The number of posts was 11,564, a new peak. The American Legion Auxiliary for the fourth consecutive year established a high mark in membership, enrolling 246,300, distributed among 9100 units. The Sons of The American Legion for the seventh consecutive year increased its numerical enrollment with 72,346 members and 3242 squadrons. The Forty and Eight membership also broke all former records again with 40,794 in 675 voitures. The Eight and Forty also reported a new high enrollment of 7018 in 308 salons.

The National Officers elected for 1939-40 were: National Commander, Raymond J. Kelly of Detroit, Mich.; Vice Commanders, Leo E. Ray, Gosham, N. Hamp.; Charles Q. Kelley, Little Rock, Ark.; Matthew J. Murphy, Chicago, Ill.; James B. Fitzgerald, Chevy Chase, Md., and H. Elwyn Davis, Pueblo, Col.; National Chaplain, the Rev. Father Patrick N. McDermott, Atlantic, Ia.; National Historian, Thomas M. Owen, Jr., Washington, D. C.; National Adjutant, Frank E. Samuel, Indianapolis, Ind.; National Treasurer, John R. Ruddick, Indianapolis, Ind., and National Judge Advocate, Ralph B. Gregg, Indianapolis, Ind. The last four were elected by the National Executive Committee, at National Headquarters, 777 North Meridian Street, Indianapolis, Ind., Nov. 23, 1939. Legislative and rehabilitation offices of The American Legion were maintained in the Legion-owned building at 1608 K Street, N. W., Washington, D. C. Editorial and advertising offices of *The American Legion Magazine* were at 15 West 48th Street, New York City.

AMERICAN LITERATURE. See LITERATURE, ENGLISH AND AMERICAN.

AMERICAN SOCIALIST PARTY. See SOCIALISM.

AMERICAN YOUTH CONGRESS. See DEMOCRACY.

AMHERST COLLEGE. An institution for the higher education of men in Amherst, Mass., founded in 1821. For the autumn term of 1939 approximately 850 students were enrolled. The active faculty numbered 83, with 17 assistants. The productive assets of the college amounted to \$11,954,000; the income for the year was \$1,093,000. The library contained 200,000 volumes. President, Stanley King, LL.D.

ANDERSON, MARIAN. See NEGROES.

ANDORRA, ăn-dôr'ă. A small republic in the Pyrénées between France and Spain, under the joint suzerainty of the President of France and the Spanish Bishop of Urgel. Area, 191 square miles; population, 5231. Capital town, Andorra. The language spoken is Catalan. Sheep rearing is the main occupation of the people. There is a governing body called the council-general consisting of 24 members (12 elected every 2 years) elected for 4 years by male citizens of 25 years of age or older. The council-general nominates the First Syndic (President) and Second Syndic (Vice President).

ANGLO-EGYPTIAN SUDAN. A British-Egyptian condominium in northeast Africa. Area, 969,600 square miles; population (estimated), 6,186,847 of whom 54,473 were non-natives. Chief towns: Khartoum, the capital (46,676 inhabitants), Omdurman (110,959), Khartoum North and Rural District (110,720), Wadi Halfa, Merowé, El Damer, Athara, Port Sudan, and Suakin.

Production and Trade. The principal products (with 1938-39 outputs in metric tons) are ginned cotton (55,500), gum arabic (chief source of the world's supply), sesamum (36,600), groundnuts (6500), senna, cottonseed (100,800), dates, mahogany, hides and skins, chillies, ghee, dom nuts, salt, ivory, shea seeds, and gold. Durra (great millet)—the staple food of the Sudanese and exported as feed for livestock, and dukhn (bulrush millet) are the main crops. In 1938, imports were valued at £E6,283,719 (cotton piece goods £E1,144,983, refined sugar £E637,927); exports, £E5,490,362 (cotton £E3,427,221, gum arabic £E630,335). Great Britain supplied 26.2 per cent of the imports, Egypt 23 per cent, Japan 17.5 per cent, and the U.S.A. 2.3 per cent. Of the exports Great Britain took 47.1 per cent, Egypt 13.1 per cent, and the U.S.A. 3.5 per cent. The £E (Egyptian pound) had an average exchange value (in U.S. currency) of \$5.0692 in 1937 and \$5.0130 in 1938.

Communications. Railway lines open for traffic on Jan. 1, 1938 totaled 2015 miles of 3 ft. 6 in. gauge. There is an all-year motor transport service between Juba and Nimule (on the Uganda border) and between Juba and Aba (Belgian Congo). Another motor transport operates, during the dry season, between Juba to Kampala (Uganda), and to Nairobi (Kenya). Over 3000 miles of the navigable arms of the Nile and its tributaries are served by a fleet of government steamers. Caravan routes traverse the country. Highways, in 1938, extended 14,240 miles. An air service connects Nigeria and the Gold Coast with the British Empire route to South Africa at Khartoum. The country had (in 1938) 23 wireless stations and 5708 miles of telephone and telegraph routes.

Government. In the budget for 1938, revenue was estimated at £E4,672,500 and expenditure at £E4,478,401. The country is administered (under the Anglo-Egyptian Convention of 1899; reaffirmed by the Anglo-Egyptian Treaty of 1936) by a governor-general (appointed by Egypt with the assent of Great Britain) aided by a governor-general's council. All ordinances, laws, and regulations are made by the governor-general in council. Flags of each country (Great Britain and Egypt) are used together. There is a governor for each of the eight provinces into which the territory is divided. Governor-General, Sir G. S. Symes whose term, due to expire Jan. 1, 1940, was extended to June 1, 1940, because of the war.

History. During 1939 the Egyptian government approved an agreement for the repayment of the Anglo-Egyptian Sudan's £6,000,000 debt to Egypt; payments are to start after a period of 10 years at the rate of £100,000 a year for 60 years. It was announced in June that water had been discovered in wells under the mountain east of the Nazir's village in the region of Ayal Bakheit, Kordofan.

ANGLO-IRANIAN OIL CO. See IRAN under *History*.

ANGOLA, ăng-gō'la. A colony in west central Africa, belonging to Portugal. Area, 487,788 square miles; population (1936), 3,484,300 including 59,000 Europeans and 21,800 half castes. Chief towns: Nova Lisboa (Huambo), the capital; Loanda, Benguela, Mossamedes, Lobita, and Malange. In 1938 there were 70 primary, 3 secondary, and 106 professional schools.

Production and Trade. The chief crops (with outputs for 1937-38, in metric tons) are maize (260,500), sugar (32,500), coffee (14,300), wheat (10,600), palm oil (3000), palm kernels (2600). Cacao, sisal, cotton, and tobacco are other crops. Wax is an important product. There are rich deposits of diamonds. Copper and lignite exist but are not mined. Salt has been found. In 1938 (values in old U.S.A. gold dollars), imports totaled \$5,000,000 (textiles, foodstuffs, and coal were the chief items); exports, \$7,900,000 (diamonds, maize, and coffee were the main exports).

Communications. In 1938, there were 40,205 miles of roads (including 17,215 miles of secondary roads), 2080 miles of railways open for traffic, 5790 miles of telegraph lines, 259 miles of telephone lines, and 19 wireless stations. The greater part of the ocean-carrying trade between Angola and Europe is in the hands of a Portuguese company.

Government. Budget: (1940) 212,003,452 angolares; (1939) 255,990,232 angolares. For 1938 revenue totaled 197,534,634 angolares; expenditure, 169,841,749 angolares (in 1937, 217,158,596 and 182,854,650, respectively). The angolar averaged \$0.0443 for 1938 and \$0.0448 for 1937. A governor-general heads the administration. The colony is divided into 5 provinces and 14 administrative districts (decree of May, 1934). Governor-General, Dr. Márquez Mano (appointed Feb. 10, 1939).

ANHALT. See GERMANY

ANHWEI. See CHINA under *Area and Population*.

ANIMAL INDUSTRY, BUREAU OF. See LIVESTOCK; POULTRY.

ANIMALS. See LIVESTOCK.

ANNAM. See FRENCH INDO-CHINA.

ANSLEY, CLARKE FISHER. An American editor, died in Solesbury, Pa., Feb. 14, 1939. Born in Swedona, Ill., Dec. 29, 1869, he received the de-

gree of A.B. at the University of Nebraska in 1890 (Litt.D., 1917) and studied abroad during 1892-94. Upon his return he joined the staff of his alma mater, being successively instructor in English (1894-96), assistant professor (1897-98), and professor (1898-99), and then transferred to the State University of Iowa as professor of English and head of the department. Also, he served as dean of the College of Fine Arts (1911-15). He retired in 1917.

In 1921 he emerged from his retirement to accept the editorship of *The New State*, a labor paper published in Lincoln, Neb., and in the following year he became director of the New School for Social Research in New York. He gave up teaching in 1924 to do editorial work and, until 1927 when he became editor-in-chief of the Columbia University Press, he did such work for the Macmillan Co., the *Encyclopædia Britannica*, and the G. & C. Merriam Co. The *Columbia Encyclopædia*, published by the University Press under his editorship in 1935, after eight years' work, was the crowning achievement of his career. He also edited the *Supplement* to this volume which appeared in 1938. Many other important works were published by the Press under his editorial direction.

ANTARCTIC EXPLORATION. See POLAR RESEARCH.

ANTIAIRCRAFT. See MILITARY PROGRESS.

ANTIGUA. See LEEWARD ISLANDS, BRITISH.

ANTI-LYNCHING BILL. See LYNCHING.

ANTIMONY. Listed as one of the "strategic" metals by the Army and Navy, antimony is not largely produced in the United States. Domestic consumption in recent years has ranged from 10 to 15 times domestic production, the difference being made up by imports. One smelter at Laredo, Texas, usually draws its supply of ore from Mexico which, together with South America, furnishes the great bulk of ore imports. China is the largest producing country in the world, Mexico second, and Bolivia third.

The trend of antimony prices was upward in 1939, reversing the record of 1938. The New York price for ordinary grades rose from an average of 11.67¢ per lb. in January to 14¢ in December. The average for 1939 was 12.36¢ per lb., only fractionally different from the average price for 1938, when the trend of prices throughout the year was downward.

H. C. PARMELEE.

ANTIOCH COLLEGE. A nonsectarian, co-educational, liberal arts college in Yellow Springs, Ohio, operated on the co-operative plan of alternating work and study periods. The college was founded in 1853 with Horace Mann as its first president, and reorganized in 1920 by Arthur E. Morgan. The number of students enrolled for the autumn term of 1939 was 729, of whom 462 were men and 265 were women. The faculty numbered 100. For the year 1938-39 the productive funds of the institution amounted to \$305,292.79, and the operating income, including research, was \$583,010.30. The library, to which a substantial addition was made during the year with a Carnegie Corporation grant, contains 54,000 volumes. Advances for the year include a new Student Counseling setup centering all counseling work under the Dean of Students; a new work-training programme for freshmen; and a new housing unit for senior women. President A. D. Henderson, LL.B., M.B.A.

ANTI-SALOON LEAGUE OF AMERICA. A federation of church and temperance organizations in the United States whose object is the extermination of the beverage liquor traffic. It was established in 1895 by a coalition of the Anti-Saloon Leagues of four states and the District of Columbia. In 1937, to meet the changed situation resulting from repeal of national prohibition, the organization's constitution was revised to place the major emphasis on state work and to enlarge the activities of the State Leagues in the states and local communities. At the end of 1939 it embraced 40 state or territorial Leagues, held membership in the National Temperance and Prohibition Council, and was affiliated with the World League Against Alcoholism. (q.v.)

During 1939 the organization's chief exertions have been directed toward the development of adequate scientific temperance education; legislative restrictions that will subordinate revenue to social considerations by measures tending to insure that the demand for alcoholic beverages shall be a progressively diminishing one; to prevent the issuance of licenses in rural and inadequately policed territory or in excessive numbers; and to secure the right of the people under local option laws to express themselves upon legislative measures relating to the liquor traffic.

The year was marked by a considerable increase in the number of no-license areas under local option law, also by a favorable report by the Senate Committee on Interstate Commerce of the 76th Congress on a bill to prohibit radio advertising of alcoholic beverages.

The officers in 1939 were: President, Bishop Ralph S. Cushman, St. Paul, Minn.; vice president, Andrew Wilson, Washington, D. C.; treasurer, Charles E. Coleman, Chicago, Ill.; secretary, George W. Crabbe, Baltimore, Md. The legal department and national headquarters are located at 131 B Street, S.E., Washington, D. C.

ANTI-SEMITISM. See FASCISM; JEWS; GERMANY, HUNGARY, ITALY, POLAND, RUMANIA under *History*.

APPALACHIAN DRAINAGE. See GEOLOGY.

APPLES. See HORTICULTURE.

AQUEDUCTS. On Jan. 7, 1939, the first water was turned into the great aqueduct which will convey water from the Parker Dam on the Colorado River 242 miles to the Metropolitan District of Southern California. On that date the intake pumping plant at the dam began lifting the river water 291 ft. to the entrance of the 2-mile tunnel through which it flows to Gene Basin reservoir. This aqueduct has 108 miles of tunnel and the last bore to be completed was the difficult 13-mile San Jacinto section on which the last cubic yard of concrete was poured October 14. By November 9 the first flow reached the main terminal Cajalco reservoir after its long journey from the Colorado and after having been lifted a total of 1617 ft. at the five pumping plants along the line. While it will be another year before the distribution system can be completed and water will reach the 13 cities of the district, the major construction features of one of the greatest hydraulic engineering works ever attempted by man have thus been brought to a successful completion.

In the meantime remarkable progress has been made on the new Catskill aqueduct for New York City which will both afford an additional supply from the western Catskill mountains (upper Delaware Drainage) and also bring into the high level

supply of certain of the existing reservoirs of the upper Croton watershed. All of this 85-mile aqueduct will be in deep tunnel. The sinking of some 20 or more shafts marked the first stage of this project. During the past year tunneling operations have gone forward between these shafts. Early in November the first of these tunneling operations was "holed through." Twenty-four more of these "meetings of the excavators" deep underground are still to come. These include the deep section between shafts 5A and 6 where the aqueduct passed under the Hudson River at a depth of 600 ft. below sea level. In view of the present depleted condition of the existing New York reservoirs caused by the abnormally low rainfall of the past year, the need for additional supply has become more obvious.

Another major project of this type is the construction of the new aqueduct to bring the water of the Swift and Ware Rivers into the Metropolitan district of Boston. The famous Quabbin reservoir is now being connected with the older system of the Wachusett supply. Steady progress on this work (noted in previous YEAR BOOKS) has been made during the year.

Projects of the magnitude of these works must be regarded as exceptional, and, while there are other great cities or metropolitan districts which will undertake such great works (the situation in Philadelphia, for example, is very critical), the bulk of American waterworks activities is on a much smaller scale. Data on the many smaller pipe lines and similar works, which make up the majority of such operations, are seldom given space in the technical press. Yet the pipe-line problem is one which the engineer constantly has to meet, and trends and changes in such construction are thus worthy of note.

The construction of a 31-mile steel and reinforced concrete pipe line to bring water from Lake Michigan to the City of Grand Rapids, Mich., shows an interesting development in such pipe-line construction. A welded water-tight steel shell was used which was lined with concrete inside and was incased in a heavily reinforced concrete exterior covering. The pipe size varied from 46 to 20 inches in diameter. Reinforced concrete pipe in 12 ft. lengths and of 84 in. interior diameter was also used on the Quabbin aqueduct. Similar pipe has, of course, been in use for many years and several notable installations in sewer and sewer outfall constructions were undertaken during the year. These examples indicate an increasing use of concrete pipe for lines of the larger diameter.

The deterioration in carrying capacity of steel and cast iron pipes, due to the roughening of the interior surface by corrosion, has also led to important improvements in lining such pipes with smooth, non-corrosive coatings.

JAMES K. FINCH.

ARABIA. A large peninsula in southwestern Asia. Area, 1,000,000 square miles; population, said to be 10,000,000. For the various divisions of Arabia see below. Arab countries outside the Arabian peninsula are presented in the separate articles on EGYPT, IRAQ, PALESTINE, SYRIA AND LEBANON, and TRANS-JORDAN.

Aden, a'den; a'den. A British crown colony on the southern coast of Arabia, about 100 miles east of the Red Sea. It consists of (a) the Aden peninsula—the seaward end being an extinct volcano in the crater of which lies the ancient town of

Aden, the suburb known as Tawahi, the area leased to the Royal Air Force and known as Steamer Point, and the village of Maala; (b) the isthmus called Khormaksar; (c) the land running to the north and to the west around the harbor to another rocky peninsula called Little Aden. The villages—Sheikh Othman, Hiswa, Imad, and Fakum are in this region; (d) the island of Perim (5 sq. mi.) in the strait of Bab el Mandeb. Total area, 80 square miles; total population (1931 census), 48,358 including 2346 on Perim but excluding the military forces. The colony contains an important naval base and fortified seaport. Aden also is the capital of the Aden Protectorate (see below).

Aden is a free port and a commercial and transshipment center for the Arabian peninsula. During recent years it has become an important oil-fueling port. The colony produces salt, soap, dhows (Arab ships), cigarettes, and cured fish. There are a number of establishments in which cloth is dyed for export. Cattle, sheep, and goats are imported for home consumption. In the year ended Dec. 31, 1937 (excluding transshipment), total imports were valued at Rs82,286,948; total exports, Rs47,223,316 (rupee averaged \$0.3733 for 1937; \$0.3659 for 1938). From Apr. 1, 1937 to Mar. 31, 1938, ocean shipping aggregating 8,878,040 tons entered the port.

For the year ended Mar. 31, 1938, revenue totaled Rs2,252,596; expenditure, Rs1,696,977. The colony is administered by a governor, assisted by an executive council of 5 members (2 ex officio and 3 appointed by the King). Aden has no legislative council. There was an appropriation in the British defense estimates for strengthening the naval base at Aden during 1939. Governor and Commander-in-Chief, Lt.-Col. Sir Bernard Reilly (assumed office Apr. 1, 1937).

Aden Protectorate. The large area in southern Arabia under British protection, extending from the Red Sea to the sultanate of Oman. It is bounded on the north by Yemen and Saudi Arabia. The eastern areas are known collectively as the Hadhramaut (Hadhramaut) made up to a large extent of fertile valleys. Included in the protectorate is the island of Socotra (1400 sq. mi.; pop. 12,000) in the Arabian Sea. Total area, about 112,000 square miles; population, estimated to be 600,000. The mainland consists of a large number of tribal areas, the chiefs of which have treaty relations with Great Britain. There is no direct administration of the protectorate but control rests with the governor of Aden who acts on behalf of the British Colonial Office in London. The governor is assisted by a political secretary and a number of political officers, the senior one being resident adviser to the Sultan of Mukalla who represents the Qa'aiti dynasty to which the larger part of the Hadhramaut owes allegiance. A number of inland towns and villages are ruled by a rival dynasty, the Kathiri.

Bahrein (bā-rān') Islands. A group of islands in the Persian Gulf, 20 miles from the coast of Saudi Arabia. Bahrein, Muharraq, Sitra, and Nebi Saleh are the main islands. Area, 213 square miles; population, 120,000. Chief towns: Manama (on Bahrein), the capital, had 25,000 inhabitants; Muharraq, 25,000. The principal industries are pearl fishing, boatbuilding, manufacture of sailcloth and reed mats, breeding of white donkeys, and crude oil production (1,139,000 metric tons in 1938). In 1937-38, imports were valued at Rs20,920,260; exports (excluding oil), Rs12,042,910 (rupee av-

eraged \$0.3733 for 1937; \$0.3659 for 1938). The islands are governed by a ruling sheik, and have had treaty relations since 1820 with the government of India (which is represented by a political agent). Ruling Sheik, Sir Hamad bin Isa al Khalifa (acceded Dec. 9, 1932).

Kuwait, kōō-wit'. An Arab state adjacent to southeastern Iraq, under British protection. Area, 1930 square miles; population (estimated), 50,000, not counting an indeterminate number of Bedouins. Capital, Kuwait. In 1934-35, imports were valued at £277,034; exports, £80,154 (pearls, horses, and wool were the main exports). There are many shipyards where dhows are built. During 1938 oil was discovered south of the town of Kuwait. The country has treaty relations with the government of India, which is represented by a political agent. Ruling Sheik, Sir Ahmed ibn Jabir al Subah (acceded Feb. 23, 1921).

Oman, ō-mān'. An independent state in southeastern Arabia. Gwadar, a port on the coast of Baluchistan in British India, belongs to Oman. Area, 82,000 square miles; population (estimated), 500,000, mostly Arabs, but there is a strong infusion of Negro blood along the coast. Chief towns: Muscat, 4500 inhabitants; Matrah, 8500. The principal products consist of dates, pomegranates, limes, and dried fish. In 1937-38, imports were valued at Rs4,167,125; exports, Rs3,299,015 (rupee averaged \$0.3659 for 1938; \$0.3733 for 1937). Muscat is the only port of call for steamers and 81 ships of 117,563 tons entered and cleared during 1937-38. The Sultan's revenue varies between Rs600,000 and Rs700,000 yearly. Sultan, Saiyid Said bin Taimur (succeeded Feb. 10, 1932).

Oman, TRUCIAL. The six Arab states along the south coast of the Persian Gulf, having treaty relations with the government of India. Area, 6000 square miles; population, 80,000 excluding 8000 nomads. Chief capital, Abu Dhabi. The export of pearls is the principal trade of the coast ports. A British political resident at Bushire in the Persian Gulf is the recognized arbiter and adviser of Trucial Oman. The states (with name of ruler and the year he succeeded in parentheses) are Shargah (Muhammad Sultan bin Saqar, 1924), Ras al Khaimah (Sultan bin Salim, 1919), Umm ul Qawain (Ahmad bin Rashid, 1929), Ajam (Rashid bin Humaid, 1928), Debai (Said bin Maktum, 1912), Abu Dhabi (Shakput bin Sultan, 1928).

Qatar, kā'tar. The peninsula extending into the Persian Gulf from the western part of Trucial Oman. Area, 8500 square miles; population, 25,000. Capital, El Beda (Doha). Treaty relations with Great Britain are regulated by the treaty of Nov. 3, 1916. Sheik, Abdullah ibn Jasim eth Thani (succeeded 1913).

Saudi (sä-ōō'dē) Arabia. An Arab kingdom occupying the northern and central part of Arabia, formerly known as the Kingdom of Hejaz and Nejd and its dependencies. During 1932 it was announced that a single constitution would be provided for the whole country but this has not yet been accomplished and there still exists two systems of government—one for Hejaz and one for Nejd. Ruler, King Abdul Aziz ibn Abdur Rahman al Faisal al Saud.

Nejd extends over some 800,000 square miles and includes the Nafud and Dahna deserts. Population (estimated), 3,000,000. The chief towns are Riyadh, the capital, 30,000 inhabitants; Hufuf, 30,000; Mubarrak, 30,000; Anaiza; Buraida; Hail; Jauf; Sakaka; Hanta. Dates, wheat, barley,

fruit, hides, wool, clarified butter, and Arab cloaks are produced. Livestock raising (camels, horses, donkeys, and sheep) is an important occupation. Piece goods, sugar, coffee, tea, and rice are the main imports. The export trade is small. Nejd and its dependencies are governed by the King, his administration being of a patriarchal nature without ministers of state. The King's eldest son (Emir Saud) acts as Viceroy of Nejd where he normally resides.

Hejaz occupies the western part of Arabia from Trans-Jordan to Asir. Area, said to be 150,000 square miles; population, roughly estimated to be 150,000. The principal towns are Mecca, the capital and holy city of Islam, with 80,000 inhabitants; Jidda, the seaport for Mecca, 30,000; Medina, the site of Mohammed's tomb, 20,000; and Yenbo (Yanbu). Dates, butter, honey, fruit, wool, and hides are the important products. The annual pilgrimage of Moslems from abroad to Mecca and Medina is the main source of income. Hejaz is still governed under the constitution of Aug. 26, 1926, and later amendments. There is a council of ministers presided over by the King's second son, Emir Faisal, who is minister of foreign affairs. During the absence of the King, the Emir Faisal acts as Viceroy.

Asir, a province between Hejaz and the independent state of Yemen, was incorporated in the kingdom of Saudi Arabia during 1933. It has an area of 14,000 square miles and a population of 1,000,000. Capital, Sabiya, 20,000 inhabitants.

Yemen, yem'en. An independent kingdom in southwestern Arabia, between Saudi Arabia and the Aden Protectorate. Area, 75,000 square miles; population, 3,500,000. Chief towns: San'a (capital), 25,000 inhabitants; Hodeida (chief port), 40,000; Taizz; Ibb; Yerim; Dhamar; Mocha; Loheiyia. Yemen's principal products consist of coffee, barley, wheat, millet, and hides. The King's eldest son (Prince Seif al Islam Ahmad) is commander-in-chief of the armed forces. Ruler, King Yahya Muhammed Hamid ed Din.

History. Of outstanding importance was the rapid development of rich new oilfields in Saudi Arabia on the eastern seaboard of the Arabian Peninsula. The Damaan Dome in the California Arabian Standard Oil Company's concession covering 240,000 square miles alone produced an average of 950 tons daily during the first half of 1939. This oil was delivered via a new 43-mile 10-inch pipeline to the deep-water port of Ras Tanura opened in 1939 on the Persian Gulf about 40 miles northwest of Bahrain. From there it was sent by tankers to the Bahrain refineries.

In July, 1939, the California Arabian Standard Oil Company obtained from King Ibn Saud exclusive rights to exploit oil deposits within an additional 89,041 square miles of adjacent territory. To obtain the concession, the company gave the King \$1,500,000 in gold coin and agreed to pay \$750,000 annually while exploration was in process, to pay royalties on the basis of actual production, and to construct a refinery in Saudi Arabia capable of supplying the country's needs. The King granted the concession to the American company despite far more lucrative offers made by Italian, German, and Japanese interests. He suspected Italy, Germany, and Japan of having political designs upon his kingdom and its petroleum wealth. Offers made by British and French oil interests were said to have been turned down for similar reasons. Ibn Saud showed his interest in the new oil developments by visiting the fields

in May. He was later the guest of the Sheikh of the British-controlled Bahrain Islands.

The British, Italians, and Germans continued their political activities in various parts of the Arabian Peninsula. The British signed a new treaty of commerce and friendship with the Sultan of Oman, replacing the treaty of 1891 which expired on Feb. 11, 1939. This continued the understanding under which Oman's deep-water port of Muscat, controlling the entrance to the Persian Gulf, would be placed at the disposal of the British navy in case of disturbances in that area. The Italian Government continued to cultivate the Imam of Yemen. It was reported from Aden in August that an Italian steamer had landed coastal and anti-aircraft guns and ammunition for fortification of the town of Sheikh Said, near the narrow southern entrance to the Red Sea.

German agents were also reported as trying to stir up the Arab states and individual tribes against the British, taking advantage of Arab opposition to Britain's policy in Palestine (q.v.). The failure of this propaganda became evident after the outbreak of the European war, in which Arab sympathies were reported to be overwhelmingly on the side of Britain and France. The Nazi-Soviet pacts in particular served to undermine German prestige among the Arabs, who were strongly anti-Communist.

In January the Saudi Arabian Government published a letter written by King Ibn Saud to President Roosevelt the previous month denouncing as a "horrible crime" the "Jewish attempt to crush the Arabs of Palestine." The King declared that the American people had been misled by Zionist propaganda and viewed the Palestine question "solely from the point of view of the Zionist Jews."

See SYRIA AND LEBANON under *History*.

ARBITRATION, LABOR. See LABOR CONDITIONS; NATIONAL LABOR RELATIONS BOARD; UNITED STATES CONCILIATION SERVICE; for *Maritime Labor Board*, see SHIPPING.

ARCHAEOLOGICAL INSTITUTE OF AMERICA. A society for the promotion of archaeological investigation and research, founded in Boston in 1879 and incorporated by Act of Congress in 1906. It has accomplished its purpose in part through the American School of Classical Studies at Athens, the School of Classical Studies of the American Academy in Rome, the American Schools of Oriental Research in Jerusalem and Baghdad, the School of American Research in Santa Fe, N. M., The American School of Prehistoric Research at Peabody Museum, Yale University, and the Committee on Medieval and Renaissance Studies. Further work of the Institute is the support of lecture programs before its local chapters and aid given to excavations. In 1939 it had 34 societies or chapters with a total membership of about 1610. The official organ is the *American Journal of Archaeology*, a quarterly. The officers for 1939 are: President, William B. Dinsmoor, Columbia University; general secretary, H. T. Westbrook, Columbia University; treasurer, Seth T. Gano, Boston, Mass.; and recorder, Stephen B. Luce, Boston, Mass.

ARCHAEOLOGY. As might be expected the turmoil in Europe has caused an almost complete cessation of activity in the field of archaeology since the beginning of September. Even during the summer suspicion of what might occur

virtually put an end to exploration. Up to that time digging was carried on at many of the old, familiar sites while several new digs have brought to light many interesting facts.

At Hermopolis in Egypt work has been continued on the site of the "ibis" sanctuary. This year the efforts of the Egyptian University were concentrated on clearing gallery "C." The two main corridors which run from north to south, turning from the east to the west, have been opened up. The gallery has the usual entrance, which consists of a small sloping opening and a descending flight of stairs that lead to the lower level. This part had not been disturbed since about 600 B.C. Exploration of this underground corridor revealed that it had been filled with jars and that on both sides niches had been cut in the walls. In these jars and niches were found mummies of cynocephali in sarcophagi of wood and stone. Between the niches the doors were filled in with irregular pieces of stone. The doorways themselves opened into rooms filled from floor to ceiling with jars that contained the mummies of ibises, and the mouths of these jars had been sealed with linen soaked in plaster. The clearing of the floor of the first corridor revealed in the middle a group of small stone sarcophagi in the form of ibises. They were arranged in groups of eight which led from east to west. It would seem that the number "eight" refers to the city of Hermopolis, inasmuch as in Egyptian the name of the city is spelled with eight strokes. The clearing of the archives office revealed a large papyrus placed in a jar. It concerns itself with judicial matters; a corpus of law dealing with the relationship of landlord and tenant and with the laws of inheritance.

In the archaic cemetery at Sakkara excavations have brought to light an important tomb from which were recovered a complete set, 63 in all, of copper swords and knives, varying in length from nine inches to two feet. Most of them were supplied with wooden handles. In addition to these weapons were many copper vessels of unique design, and also some bodkins and a set of chisels. The latter are particularly interesting, as models only have previously come to light. Inscriptions reveal this to be the tomb of King Zer, the third ruler of the first dynasty.

Also at Sakkara the clearing of the great court of the pyramid of King Zoser brought to light three small statuettes of granite, found at the foot of the pyramid where robbers had abandoned them. They date in the fifth dynasty. Two form a group of standing figures which represent the same person, the other, a seated figure thirteen inches in height carries the name of Her-en-Kaw, who was director of the scribes of the textile fabrics. On the standing group were traces of color on the head, nails, and face.

Further work has been done on the site of Lachish in Palestine. Here have been found tombs of the Middle Bronze Age as well as caves which were occupied as dwellings as early as the Early Bronze Age. One of these caves proved to have been a pottery of the Late Bronze Age, in which were found many unlaked fragments of pottery together with lumps of clay prepared for use. Not the least interesting of the finds were two stone pivots which had belonged to potter's wheels. Near the entrance to the cave was the potter's stone seat let into the bedrock. In front of it a circular depression may have been the position of his wheel. Many tools were re-

covered, also lumps of ochre and pebbles and shells which had been employed to polish the wares. In an adjoining cave, accessible by a circular staircase, the potter kept his finished wares.

Excavations just inside the city gate of Lachish have supplied information about the invasions of Nebuchadnezzar. It can now be made out that twice the city suffered from fire. The earlier conflagration was in the time of Jehoia-chim, the second at the close of the reign of Zedekiah. A large space has been cleared to the east of the palace which has freed the whole length of the building. Beneath the brickwork which had fallen from the upper part of the wall and which showed traces of burning, was located the lower portion of the main entrance staircase. This had been built over an earlier staircase of which only two steps remain. Someone had scribbled on the face of one of these steps the first five letters of the Hebrew-Phoenician alphabet. This is the first time anyone has found these letters written in the conventional order. The palace seems to have been destroyed at the time of the first disaster to the city. In one of its rooms workmen found a fragment of a tablet containing part of a letter, the opening words of which were, "In the ninth year." It was found in some ashes on the floor of the room, and this may indicate that the "ninth year" may refer to the time of Zedekiah, inasmuch as it was in the ninth year of the rule of that king that Nebuchadnezzar sacked Jerusalem for the second time.

Of particular interest is the work done this past year by the joint expedition of Brown and Harvard Universities on the site of Van in Northern Asia Minor. The efforts of the expedition were directed toward the exploration of the hill of Van Kaleb where evidence has turned up which shows that this site was occupied as early as the fourteenth century B.C. by a people who came to be the chief rivals of the Assyrians in this part of the world. The power of this people seems to have come to an end when the Medes destroyed the place about 600 B.C. The finding of Vannic and Assyrian inscriptions on the walls of the palace, which was discovered on the site, should throw considerable light on the history of this place and its inhabitants. On the north side of the hill of Van Kaleb a most interesting rock terrace, about 40 by 100 feet, was uncovered on which a ceremonial platform stood. Here also was found a drain which suggests that it was connected with some sacrificial rites. Not far away, at the mound known as Tilke Tepe, the expedition found some beautifully executed pottery which speaks for the excellence of early Vannic workmanship. Many skeletons were found, of which some were placed in a contracted position, while others showed signs of burning.

At Kunduz, twenty-five miles south of the Oxus, in Afghanistan, excavations at the depth of twelve feet brought to light column bases of the Hellenistic age. These belonged possibly to a temple which is the first Greek structure found in Central Asia.

This year marked the ninth campaign on the site of the Athenian Agora, with the major efforts concentrated on the area on the Areopagus extending west to the modern street which runs from the Acropolis to the Theseum. Here the accumulated earth was found to be shallow. In clearing the surface of the rock the workmen came across a chamber which had been hewn into

the bedrock. It was found to be filled with a mass of splintered stone, deposited there at a somewhat later date when the burial was changed. A clue to the date of the tomb is given by the fact that the rockcut entrance passage contained only fragments of Mycenaean pottery. Inside the chamber a bench had been cut along each side of the room at a height of two and one half feet from the floor. In place on the north end of the eastern bench were found six vases and a cylindrical box of ivory. The box was intact. To the east of the door against the north wall two large vases stood on the floor, and beside them a long-handled copper ladle. In the center of the chamber on the floor were ashes and charcoal. The grave itself had been cut to the depth of four feet in the floor of the chamber. The slab of stone which originally covered it had at some time in the past been pried at an angle to one side. The grave itself was empty, but on the floor were a number of small objects, including a bronze mirror, a small ivory box, ivory pins, and, on the floor to the north of the grave, three piles of golden objects. The six vases found on the east bench belong to the first half of the fourteenth century B.C. The ivory toilet box found near these vases is beautifully carved with griffins attacking stags. The various objects prove that the tomb was that of a princess.

Work on the slope of the Acropolis near the *klepsydra* uncovered a boundary stone of the Ceramicus at the northwest corner of the excavations.

At Delphi one of the most interesting finds has been made under the Sacred Way of the temple of Apollo. Here were recovered twenty bands of sheet gold, 0.20 m. in length and 0.05 m. wide, ornamented with spirals, rosettes, etc.; two bracelets; 12 palmettes; two large and two small rosettes, and seven gilded bronze heads of lions, as well as many other small objects, all of which originally belonged to chryselephantine statues whose heads, hands, and feet have been found.

At Dendra in Argolis, Professor Persson of the University of Upsala found rockcut Minoan tombs from which he recovered gold plates, necklaces, a number of other ornaments, including many objects of silver, and about one thousand bits of amber. There were in all five tombs. One, dating about 1400, seems to have been that of a princess, another a royal burial of about 1350 B.C. The latter is one of the largest chamber tombs ever discovered; in it much gold was found, and, among other things, a beautifully wrought cup weighing 100 grs.

At Eleusis, where the Greeks this year have continued their excavations, traces of a seventh century building on the site of the Sacred House have been found. At the south end of the building a grave of a youth dating from the geometric period was uncovered.

Five months' work by the Germans at Olympia has uncovered the stoa located on the south side of the Altis. The evidence forthcoming now shows that the building belongs to the fourth century instead of the Hellenistic Age. As a result of the digging it is also now possible to follow the history of the stadium. The oldest, belonging to the sixth century, simply afforded a place where the spectators either stood or sat on flat mounds which enclosed the course on all sides. One side made use of the natural slope of the hillside, the other was artificially constructed. A regular slope on both sides was not given the

place until 460 B.C. At this time the stadium assumed the conventional form, but at no time did it have stone seats. The most extensive remodelling came in the fourth century B.C. Not the least interesting of the finds were a number of round bronze shields and a couple of bronze helmets, which were discovered on top of the archaic south mound where they had been laid when the stadium had been remodelled in the fifth century. These were votives, and the shields had once hung on posts set in the mound at this place.

One of the most thrilling finds of the year was at Pylos where the expedition of the University of Cincinnati and the Greek Ministry of Education uncovered what may be Nestor's palace. On the hill called Ano Eglianos a late Mycenaean palace was found, which, while as yet not entirely cleared, is at least 60 by 65 m. in extent. In a small room about three meters wide in the southern part of the building at least 600 inscribed clay tablets were found, which show a script practically identical with that of Crete. They are the first tablets found on the mainland of Greece, and are of the linear, class B type of Crete. They are clearly inventories of the late thirteenth century.

Of equal interest with the finds at Pylos are the discoveries made by Professor Marinatos at Thermopylae. Here he has established beyond question the hill to which, Herodotos says, Leonidas' body was carried by his three hundred Spartans. The countless arrowheads would bear out Herodotos' statement that the sun was darkened by the cloud of arrows shot by the Persian archers. Here also was found the Wall of the Phocians from which the Greeks made their successful charge before they were betrayed. The wall shows the hasty repairs of which Herodotos speaks, and in it was found embedded a stone gatepost proving that the wall contained the gate which gave the name to the place.

A late Roman and Early Christian cemetery has been uncovered outside the city wall of the city of Aosta in Italy. In the more ancient graves the burials were covered with penthouse roofs of tiles. At Beneventum the *cavea* of the theatre has been cleared; at one end of the *scena* is a large hall with the walls veneered in marble. In the eastern corner of the excavated area at Herculaneum were found some wax tablets and *graffiti*. At Petralia in Sicily the so-called "Grotta del Vecchiezzo," three hundred feet deep, has been cleared. It proved to be a cave artificially adapted by primitive man, and had been used as place of worship. From it were recovered many specimens of pottery, stone, and bone. The vases are related in style to those of central and western Sicily.

In preparation for the World's Fair of 1942 a large area at Ostia is being cleared; at present the "Small Market" has been completely bared. In the area between the *Harria Epagathiana et Epaphroditiana* and the ancient shoreline the digging has brought to light several streets, whole blocks of houses with shops, and the offices of *collegia*. Another hotel with the upper stories partially preserved has also been found.

At Pompeii, in *Regio I, Insula VIII*, a number of houses of the "tufa" period have been uncovered. One of these, because of its frequent restorations, has been called the "House of the Four Styles." Nearby was found one of the best preserved dyeing establishments in Pompeii. In one house was discovered an ivory statue be-

lieved to be Indian. Near the middle of the north side of the Circus Flaminius, in Rome, has been found a building which may be the Temple of Bellona.

OLIVER S. TONKS.

ARCHERY. See SPORTS.

ARCHITECTS, THE AMERICAN INSTITUTE OF. A society founded in 1857 to organize and unite in fellowship the architects of the United States, to combine their efforts so as to promote the aesthetic, scientific, and practical efficiency of the profession; to advance education in architecture and in the arts and sciences allied therewith, and to make the profession of ever-increasing service to society. The corporate membership of its 70 local chapters in 1939 numbered more than 3000 of the practicing architects in the United States. The official organ of the society is *The Octagon*, a *Journal of The American Institute of Architects*.

The officers elected at the convention held at Washington, D. C. on Sept. 25-28, 1939, were: President, Edwin Bergstrom, Los Angeles; Vice President, Walter R. McCornack, Cambridge, Mass.; Secretary, Charles T. Ingham, Pittsburgh; and Treasurer, John R. Fugard, Chicago, Ill. The executive secretary is Edward C. Kemper. Headquarters are in *The Octagon*, 1741 New York Ave., Washington, D. C.

ARCHITECTURE. By a miracle of good fortune, 1939 ended with the architectural treasury of Europe substantially intact despite the new war. Of the heavy destruction in Warsaw and the modern Polish cities there was no accurate inventory. To the end of the year, the damage to the southern cities of Finland, possessed of one of the finest bodies of contemporary building in Europe, was apparently light.

The war ended a decade. It had begun with internationalism predominant and a major historic design transformation well under way throughout the world. It also began with world-wide business depression, and ended with architectural planning and design thrown into separatist nationalistic paths. In the United States the depression ended the great skyscraper era and threw the energies of the best architects into a wholly new field, that of housing. "Modernism," which had come to dominate the architecture of England, appeared to be gaining ascendancy here. The year 1939 was marked by rapid improvement in the volume of construction, and by the interest in architecture generated by two major fairs. See **BUILDING; HOUSING.**

The Fairs. With more than thirty million admissions, the World's Fair at New York and the Golden Gate Exposition at San Francisco put their huge architectural displays before a larger audience than had ever been assembled on the continent. Of the two, the San Francisco exposition was by far the more modest in its size and aims, playing for entertainment rather than edification, and was far more successful as a unified conception. Especially in its western part, it was frankly a large outdoor stage set. The site, on Treasure Island in the San Francisco Bay, afforded some of the most remarkable landscape views in America. The scheme, in the western part, of closed courts, protected the visitor against prevailing winds, gave the effect of a fairland closed off against everyday reality, and permitted the soft suffusion of the whole in the most beautifully controlled colored nightlighting yet achieved in any exposition in the United States.

In the eastern part of the exposition, dominated by pavilions built for government bodies, the California architects contributed handsomely to the most progressive trends in architecture in their light, dramatic, latticework handling of construction in the new plywood. Outstanding was T. L. Pfeuger's U.S. Government group, twin low-lying rectangles (with mural fronts) separated by a dominant free-standing central pavilion, an open roof supported on a cluster of 48 highly decorative plywood open-lattice columns. (Especially merit attached to that part of the exhibit devoted to the American Indian, laid out by Rene d'Harnoncourt & H. Klumb.) Other handsome structures in this governmental group were: the California Auditorium (also by Pfeuger); the Alta California and San Joaquin Valley county buildings by Ernest Born. Further splendid fresh examples in wood: the Hall of Flowers (M. Daniels, arch.; F. Chapman, C. Seage, collab.), and Yuerba Buena Club, nearby, by W. W. Wurster, its handsome latticed exterior charmingly correlated with the close poplar planting. (See **GOLDEN GATE INTERNATIONAL EXPOSITION.**)

In New York the "trylon and perisphere" and the ramped "helixline" (by Harrison & Fouilhoux) succeeded beyond expectation; they were a photographer's dream and pictures became ubiquitous. The exhibits, covering more than a thousand acres, more than any known previous fair, gave residents a summer's occupation. The best achievements were individual exhibits, especially those by industrial designers and the foreign architects. To students of recent large expositions elsewhere it appeared as if the guiding spirits of the Board of Design, quite unpracticed in planning for the type of design they proposed to handle, had conceived of "modernistic" (as the publicity men called it) as merely an amiable chaos, to be held together with tag-ends of Beaux-Arts formalism. The encouragement this example might give to bizarre accretions along the nation's highways and in its small towns, thrown together haphazard but without the saving space or bunting of the Fair, could give pause to the judicious.

The popular "smash hit" of the Fair was the great moundlike home of General Motors, because it housed Norman Bel Geddes' futurama of Highways and Horizons, whose glorification of elaborate traffic facilities was viewed from individual moving chairs.

An equal preponderance of educated and professional opinion seemed to fasten upon the small Swedish pavilion, by Sven Markelius, as the outstanding architectural performance; numerous commentators fell concertedly on the word "civilized." The grouping was composed of an outdoor restaurant, a pair of display rooms, and an arrangement of open shelters—their wing-like roofs supported with technical finesse—all thrown about a charming pool and garden. A special air of grace characterized the union of words and symbols chosen to convey a neighborly people's hopes and aspirations: how the Swedes manage their resources, what they were doing to secure homes, recreation, healthy babies, and the other things that make life human; against the propaganda elsewhere in the Fair this was especially welcome.

Other points of interest were too numerous for description: Finland's remarkable transformation of a rectangular room by the Aaltos' spectacular forward-leaning wavy wooden screen; the Cor-

busierish pavilions of the South American countries, Brazil being noteworthy on its own (L. Costa, O. N. Soares, arch's.; P. L. Wiener, exhibits); Italy's bold waterfall which, however, with Roma on top, was thought by some to have taken "the step that lies beyond the sublime"; Russia's monumental horse-shoe, thrown about the proletarian in stainless steel on a red shaft, the greatest popular favorite and a masterpiece of vulgarity in both meanings (B. M. Iofan, K. S. Alabian); Poland's gilded basket tower (J. Cybulski, J. Galinowski, arch's.; Cross & Cross, assoc.); Belgium (van de Velde, Stynen & Bourgeois) stately and reposed despite miserable exhibition technique in the main hall; Ireland (M. Scott, L. H. Bucknell), a shamrock that surprisingly made a good building; the house-like type of all Scandinavian countries as opposed to the monumental type affected by empires and dictators alike. Among commercial exhibitors: Ford (W. D. Teague, des.; C. C. Colby & R. R. Kilburne, assoc.; Albert Kahn, Inc., arch.) with its exciting picturesque use of a spiraling outside ramp and the fine three-dimensional exposition, with stylized little dolls, of the cycle of production; Petroleum Industries (Vorhees, Walker, Foley & Smith) like a great blue triangular kite; Budd Mfg. Co., by the same architects, a vivacious set of umbrella-like stainless-steel shelters; Distillers (Morris Sanders) with its freshly handled gardens and decorative name-shield. In the amusement area, George Howe and his associates did especially well with the Children's World, not meddling with the familiar rococo of merry-go-rounds and the like, while adding wittily a series of standardized modern shelters. Many other exhibits of perhaps equal merit must remain unmentioned for lack of unlimited space.

Residential. In 1939, residential construction valued at \$1,340,000,000 passed the billion mark for the first time since 1930; meanwhile the average cost per dwelling had dropped during three years by 10 per cent to \$3611, leaving open the question of whether better design and wider consumption had raised the standard of living.

The most notable public housing project under USHA was Queensbridge, N. Y., the largest yet, serving 3149 families (W. F. R. Ballard, chief arch.; H. S. Churchill, F. G. Frost, B. C. Turner, assoc.). Its unprecedented Y-shaped (6-story) units turned out well in relation to landscaping. Other projects: Brentwood Park, Jacksonville (M. C. Greely, chief; Smith, Drake, Segerberg, Fetner, Sheftall, Bryson, assoc.); Santa Rita, Tex. (H. F. Kuehne, chief; B. E. Gieseke, A. W. Harris, assoc.); Willert Park, Buffalo (F. C. Backus, arch.).

Leading apartment projects using FHA mortgage insurance were Olentangy Village, Columbus, O. (R. C. Snow, arch.); Wyvernwood Village, Los Angeles, Cal. (D. J. Witmer, L. F. Watson, arch's.; H. Sadler, landscape arch.), and Interlaken Garden apartments, Westchester Co., N. Y. (deYoung & Moscovitz, arch's. G. D. Clark & M. Rapuano, landscape arch's.). Both the USHA and the FHA schemes represented the much higher standard that had been carried into average practice since the first housing idealists had pushed through their decisive innovations, in schemes for people too poor either to pay or to resist.

The enormous "Parkchester" apartment scheme in the Bronx, New York, under way for the Metropolitan Life Insurance Co., surpassed all

government projects in size, being laid out in 12,273 dwelling units for about 40,000 occupants. (R. H. Shreve, chief). Planners were inclined, however, to compare the site plan unfavorably with the better class of subsidized work. Another large and very imposing apartment group was "Castle Village," by G. D. Pelham, Jr., for Dr. Paterno on the site of his former well-known castle. The five separate 16-story x-shaped units added a good strong note to what was already the superlative urban landscape above the George Washington Bridge; situated on a bluff 200 feet above the river, their x-like arrangement opened the magnificent view to 512 of 569 apartments, although it might be said that only a real estate mind could have felt itself compelled to assign the four best corners, with expensive curved corner windows, not to living rooms but to bedrooms.

Among private houses, the difficult small type predominated more than ever. If Cape Cod were not to be the only attractive solution, much work was called for. Promising solutions: at Midland, Mich., by A. Dow; Lexington, Mass., by S. Glaser; Portland, Ore., by J. Yeon; Kirtland, O., by B. J. McGarry for Contemporary Houses, Inc. Among further efforts at prefabrication, the demonstration house at Lebanon, N. J., by J. B. Pierce Foundation (J. L. Davison, director of research) had the advantage of permitting indeterminate wall lengths and almost completely free placing of openings by very simple means.

The choice of larger houses for mention must be somewhat arbitrary. European continental modernism was spreading fast but its use was often so mannered and timid as to make it another meaningless traditionalism; consequently the quarrel in the press had little substance to go on. Among the better houses allied to contemporary Europe, those at Lincoln, Mass., by the well known Gropius & Breuer, pioneers in the movement, had the authentic elegant touch, revealing, incidentally, that the absence of American "modern" furniture can greatly assist a progressive design. Other houses, more or less allied in trend: at Tuxedo Park, N. Y., for Alfred Loomis, by W. Lescaze; in Denver, a good swinging plan for the Bromfields, by B. Hoyt; Neutra's house for John Nichols Brown on Fisher's Island and his Albert Lewin house, Santa Monica, Cal., both overlooking oceans.

Houses suggesting some affinity to Frank Lloyd Wright: the Midland, Mich., houses of A. Dow; two houses in Indiana by John Lloyd Wright (fils); Walter Kohler house, Kohler, Wis., by W. E. Deknatel. Wright's own "Suntop Homes" at Ardmore, Pa., placing the kitchen split-level to constitute an observation turret for the whole house, was characteristically pregnant with possibilities and productive of controversy.

Houses suggesting unhampered progressive approach: the Fair houses scattered about San Francisco, by W. W. Wurster, Birge M. and David B. Clark, G. A. Daily, all characteristic up-to-date California houses; G. Howe's summer house for Mrs. Clara Fargo Thomas on Somes Sound, Me., cantilevered over the coast-line on its stunning site; a house at Evanston, Ill., by Perkins, Wheeler & Will; at Highland Park, Ill., by Schweikher & Lamb; ranch groups, respectively, for E. L. Walbridge, Sonoma Co., Cal., by E. T. Spencer, and for S. Meigs at Carpinteria, Cal., by W. H. Francis. Strictly traditional eclecticism was best, as usual, where history supplied the shell for remodelling, as in the delightful farm

group for J. L. Eastwick, Chester Co., Penna., by J. L. Evans.

Institutional Building. Museums. The opening of the Museum of Modern Art in New York, in itself a wide-ranging display of up-to-date designing, was a colorful architectural event, due mainly to the pageant-like character given the brightly dressed crowd by the combination of garden, roof terraces, and intermittent glass walls under nightlighting. The building stepped entirely out of the palace type and belonged, in terms of structure and underlying plan, with lofts and department stores. (P. L. Goodwin & E. D. Stone, arch's.; C. S. Stein, consult.)

The competition for the proposed Smithsonian Gallery of Art in Washington was the first open competition for a large Washington building since Jefferson. The winners were Eliel & Eero Saarinen; close runner-up, P. L. Goodwin.

Hospitals took on the sober forms of free design with ever more articulated planning. A handsome mass was the new Memorial Hospital in New York (J. G. Rogers, H. C. Pelton, assoc. arch's.); another the city hospital of White Plains, N. Y., by Schultze & Weaver. In the small, rural, Little Traverse hospital at Petoskey, Mich., Skidmore & Owings gave a masterly demonstration of design effectiveness despite limited funds.

Schools. An unusually large proportion of the schools published were good, straightforward, and decently scaled. Examples: the high school by Morris & Frewen at Idaho Springs, Colo.; Franklin & Kump's elementary school at Fowler, Cal., and their better, more independent one at Sierra Union, Cal.; the Coolspring School, La Porte Co., Ind., by J. L. Wright. Perry, Shaw & Hepburn's high school at Wellesley, Mass., showed an advance in planning over their Fitchburg School of the previous year; the firm's accustomed finesse was employed on adapting the Scandinavian manner of the twenties.

Public Works and Regional Planning. T.V.A. The architectural press chose 1939 for enthusiastic recognition of the work quietly done by the Tennessee Valley Authority since 1933. If their opinion were to be generally accepted, the project might come to stand in history as a great twentieth-century achievement of a democratic government, not only for the high-hearted quality of the design and the interplanning of multiple regional interests but for the pompless manner of taking the citizen into partnership by means of thoughtful facilities for his education and pleasure.

Bridges. (q.v.) The Bronx-Whitestone suspension bridge to Long Island was finished in time for the Fair, and roused commentators to superlatives of praise, some declaring it the finest suspension bridge design of large scale yet done. (O. H. Ammann, ch. eng.; Allston Dana, eng. of design; Aymar Embury, arch.) New York architects, whose A. I. A. chapter had joined in the fight against the proposed Brooklyn-Battery bridge, were meanwhile pleased by the presidential interdiction of a well-meant scheme which they felt would have ruined the famous downtown skyline.

Commercial Buildings. At Rockefeller Center the completion of "Building No. 11" and commencement of the final structure forecast the completion of the great group which, despite glaring plan errors, still represented the culmination of the great American skyscraper effort. (Rein-

hard & Hofmeister, W. K. Harrison, J. A. Foulhoux, architects of No. 11.) The National Broadcasting Co.'s big new studio at Hollywood (by O. B. Hanson, NBC ch. eng., & Austin Co.) made use of wide-ranging plans to diminish acoustical problems but the streamlined forms came out of stock.

Stores. Burdine's department store at Miami (E. L. Robertson, J. R. Weber, arch's.; Miss E. Lemaire, interior designer) carried forward the newer clean-cut fashion with extensive use of glass block in a handsome way. A number of small specialty stores made use of the new tempered plate glass in doors giving the startling effect of a wholly open interior: e.g. a haberdashery shop in New York by Ketchum & Gruenbaum.

Industrial. B. B. Chemical Co., Cambridge, Mass., by Coolidge, Shepley, Bullfinch & Abbott might serve as an example of the typical better industrial designs.

Great Britain. Besides throwing architects into confusion, the war produced incongruities such as the accommodation of evacuated city-dwellers in historic Blenheim. The employment of T. S. Tait of Tait, Burnett & Lorne, to devise standard camp plans for large-scale prefabrication, resulted in excellent layouts, opening the possibility of post-war recreational use on a scale comparable with what the dictators regularly do for their people.

The Cabinet surprised technicians by rejecting the considered and up-to-date plans of the Borough of Finsbury for air-raid protection, drawn up by the enterprising firm of Tecton. The Government's own first efforts in this field were not impressive.

Not connected with the war, an event of great importance to all countries was the outcome of the so-called Borders test case. Here an energetic woman acting in her own behalf got the principle established by Mr. Justice Bennett that reputable building loan societies, in taking over financing arrangements for jerry-builders, thereby associate themselves in a "fundamentally dishonest business" of providing dwellings unfit for human habitation, and can be held legally culpable.

In large commercial and public buildings there was reigning conservatism within the contemporary trend. The headquarters of Imperial Airways, Ltd., in London, by A. Lakeman, carried more weight of Empire than lightness of air. Commonwealth House, High Holborne, followed Dutch precedents of the twenties in its romantic terraces and waved surface treatment. The new Liverpool Philharmonic Concert Hall, by H. J. Rowse, a tall front with twin curved projecting turrets of obscure usefulness but monumental effect, had similar affinities. By contrast, in a small library on the Park Estate, Leicester, the architect made splendid functional use of a rotunda with a cloverleaf arrangement of outrooms that at first looked only like geometry on a triangular lot. Full publication of Impington Village College (by Gropius & Fry) emphasized its many-sided instructiveness as a model and also revealed kinship with American plan types (Neutra's in Los Angeles) and purposes (a rural cultural center comparable to the school at Hightstown, N. J.).

Town halls were variously given conservative contemporary or modified Georgian dress over similar plans. Good massing characterized the Greenwich Town Hall, by C. G. Culpin. Among

excellent hospitals were the one at Chichester (C. G. Stillman, arch.), Luton & Dunstable Hospital (by Parrott & Dunham), London Fever Hospital (by Clifford Webb) with its precautions against cross-infection, and the unusually good Nurses' Home at Macclesfield by Frederick Gibberd.

Among recreational facilities, the New Casino at Blackpool (J. Emberton, arch.; H. Best, assoc.) was of the glass rotunda type, with a fanciful corkscrew staircase in front for gayety; holiday establishments such as Prestatyn Holiday Camp in Flintshire (Wm. H. Hamlyn, arch.) packed 900 people into "chalets" surrounded by unlimited facilities that would make an American tourist camp proprietor's eyes pop.

In residential building by far the most entertaining single event seemed to be Tecton's penthouse interior for the top of Highpoint II. (1938 YEAR BOOK, page 53). This was for those bored with flat cubical interiors and the all-pervasive chrome finish of the usual up-to-date Continental interior. Such ingredients as a wave-curved ceiling, rough pine wall panels of the cut that American woodsmen call "brainstorming," rustic log chairs, Victorian curly iron chairs, a table on a cantilevered T-iron support, cowhide covers, selected driftwood knots, and more, were stirred with a deftness that brought a result even more unquestionably smart than what had gone before.

Germany. Germany went into the war from the midst of a great building boom. Annual dwelling production in 1936-38 had averaged over 300,000 units, approximately equal to the output in the high years 1928-30. In 1938, 38 per cent received government subsidy. The government's share in total building production was four-fifths; despite a desperate shortage of materials, especially wood, the vast monumental schemes for "putting the stamp of National Socialism" forever on the big cities had continued; in addition, in 1938-39, the West Wall fortifications consumed a high percentage of the total. Dr. Todt was appointed dictator over the building industry and the list of buildings scheduled was cut in half.

The strongest peculiarity of German architecture lay in the special building types produced. These included numbers of barracks, always in open country; 600 youth hostels to hold country youth in the small villages; larger hostels with tight bunks for youth wandering to heroic shrines, such as the Marienburg;—encouragement to peasant building in traditional forms with maximum handicraft expenditure on elaborate joinery and the like; recreation buildings for the labor corps of individual factories; large new plants for favored industries, e.g. the excellent Junkers auto and airplane plant in Dessau, designed by W. Issel; and the projected "city of 22,000" around the new Hermann Goering works; finally, of course, there were the enormous monumental buildings of the government. In addition, Germany since 1934 had been as far ahead in the art of building for aerial defense as she was in the airplane industry.

Architecturally, these building types tended to fall into strict style categories, corresponding somewhat to European habits at the time of Hitler's youth: i.e. a congeries of neo-classicisms in the government buildings, adding up to the peculiar "Albert Speer" stiffness; medieval ideals in residential construction including the largest; clear-cut functionalism strictly limited to the production units within factory groups. In luxury

houses, an old hand like F. A. Breuhaus might manage, in a Berlin example, to achieve quite a nice open contemporary wing plan, provided he supplied a romantic tower as a sort of knee-cap.

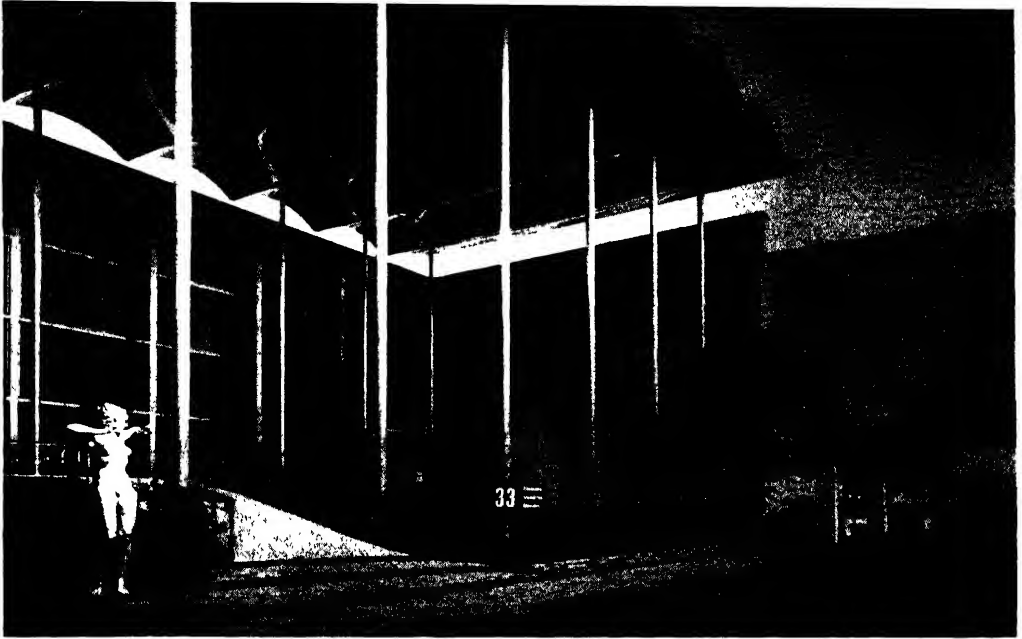
Italy. Though free of eclecticism, Italian architecture tended to become ever more formalized. A surprisingly large group of buildings in Italy are the new mass recreation centers, of which the "Colonia XXVIII Ottobre" furnished a prominent 1939 example. In designing a whole satellite town for industrial workers, the architects A. Sartoris & G. Terragni were able to make Rebbio a demonstration piece of Italian plastic skill, faultless scaling, and clean detail. The office building for the Montecani Co., Milan, by G. Ponti, with the usual careful proportioning and extreme restraint, was the last word in the world in convenience and equipment. The Augustinian bimillennial exposition showed how close modern Italy can be to Rome at its most pompous; the Leonardo memorial exposition furnished one dramatic detail, the plaster models of flying figures supported on pipe-work scaffolding; the Palace of Italian Culture, the most telling of the designs for the projected Rome Exposition of 1942, a cube with each face showing about a hundred arched openings equally spaced in both directions, and mirrored again in a pool, with no sign of any capital or molding, showed the brutal simplicity with which Fascist designers can surpass even the famous front of the Pitti Palace (Guerini, Padura, Romano, arch's). Perhaps by coincidence, the usual strain of work of functionalist character was absent from the Italian architectural press.

Switzerland. The Swiss National Fair on the Lake of Zurich constituted one of the year's finest architectural events. Built compactly on two sides of the lake, with a cable car connection, at a total cost of around 4½ million dollars (slightly more than the Soviet pavilion alone in New York), this gay little exposition actually outdrew the great New York Fair in the early days with a record attendance one holiday of 180,000. The wood construction was handled throughout with light-hearted virtuosity; the placing of the sculpture, such as the white boy and horse on the shore of the lake, made the solution at New York seem loutish. People were carried right through under the buildings by means of the "Schiffbächli," an ingenious little canal through which water was pumped to propel the boats.

Belgium. Belgium's international exposition of the year was at Liege, situated in a future park on both sides of the Meuse; the subject was the use of water. The vistas were well organized and very pleasant, but the buildings erected by the various countries were more conventionally modern than those of the Swiss show. Germany, missing from fairs since Paris, 1937, was back in with a building by M. Fahrenkamp, absolutely in the official style.

Other Belgian buildings: the central railroad station, Brussels, by Baron Horta, with clear organization visible on the exterior, in the tradition of Perret; I. N. R. Broadcasting Station, by J. D'ongre, the continuation of horizontal treatment up the rounded little tower turning it into something of a candy-stick; houses, at Brassaet, by P. & C. de Nys, and at Rhode-St.-Genese, by Victor Bourgeois.

Netherlands. Dutch "advance guard" architects suffered bitter disappointment when three town halls in a row, submitted to competition,



Courtesy, The Swiss Federal Railroads - Photograph by L. Beringer

12

THE ALUMINUM PAVILION

One of the interesting features of the Swiss National Exposition at Zurich, Switzerland

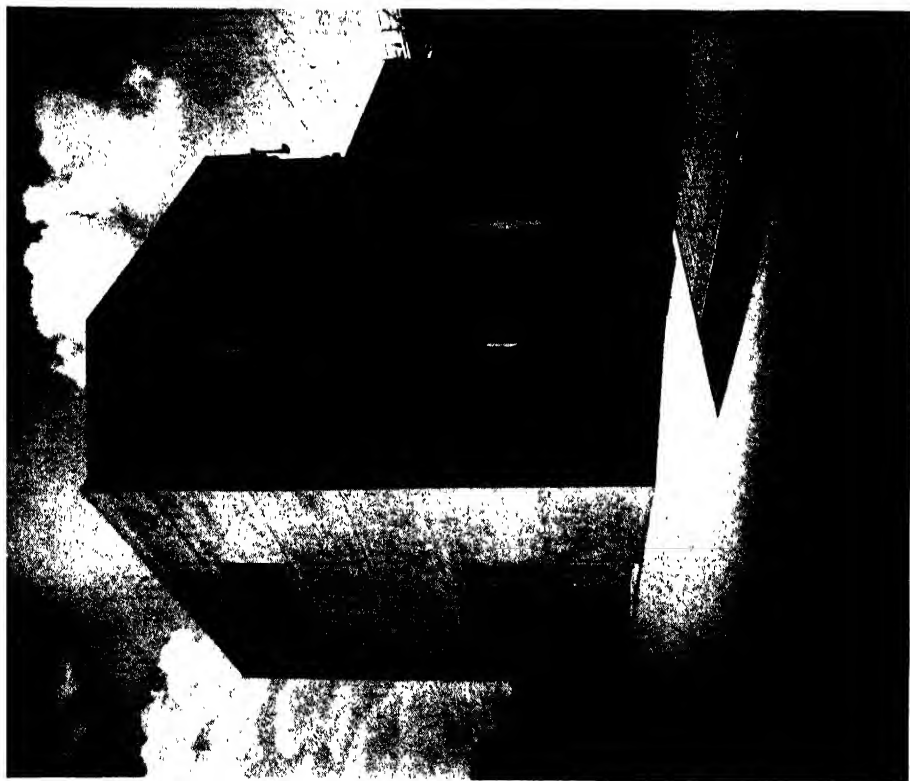


Courtesy, The Tennessee Valley Authority

GUNTERSVILLE DAM

The observation porch of the visitors building at the Tennessee Valley Authority's Guntersville Dam on the Tennessee River in northern Alabama

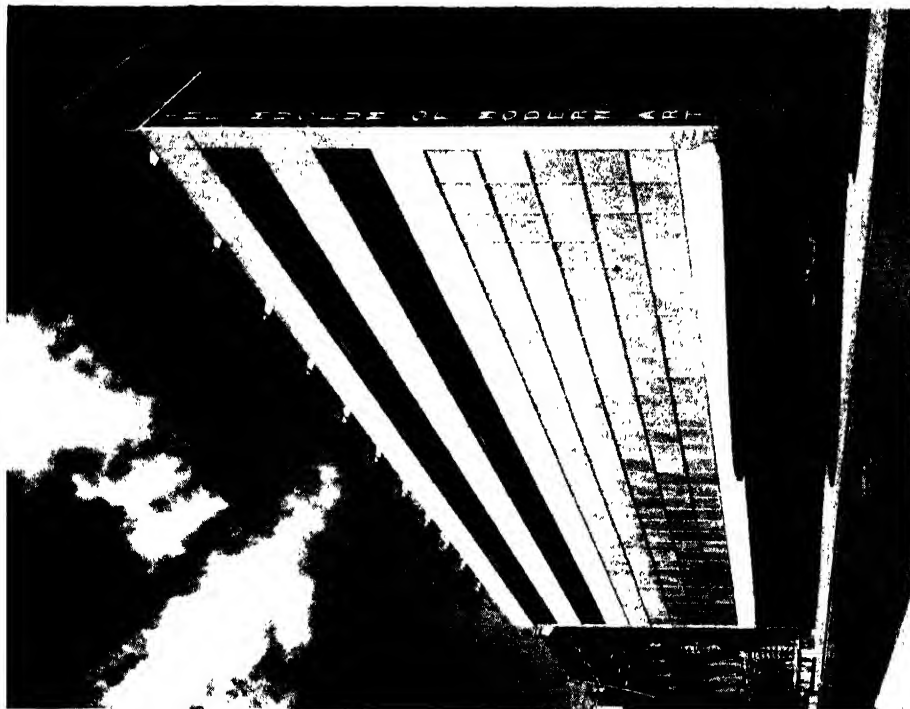
ARCHITECTURE



Courtesy, The Tennessee Valley Authority

GUNTERSVILLE DAM

A view of the lock operations building at the Tennessee Valley Authority's Guntersville Dam on the Tennessee River in northern Alabama. The dam, completed early in 1939, is 94 ft. high and 3979 ft. long, with a reservoir area of approximately 68,200 acres reaching 82 miles upstream.



Courtesy, The Museum of Modern Art—Photograph by Wurts Brothers

THE MUSEUM OF MODERN ART

The new building of the museum at 11 West 53rd Street, New York City. The architects were Goodwin & Stone.

went to designers using wholly historic forms, with a faithfulness of reproduction rarely seen any more in Europe. Especially hard-fought was the battle at Amsterdam, where the jury put on display two finalist schemes: one, by M. Duintjer & A. Komter, a mild contemporary performance, the other, by J. F. Berghoef & the engineer J. J. M. Vegter, undisguisedly medieval. The latter was ultimately selected. Not much distinction attached to the other winning designs, at Eindhoven by J. v. d. Laanz, and at Maasliis by E. H. A. and H. M. J. H. Kraagvanger. Other Dutch buildings: the St. Homobonus Co-operative administration building, by G. H. Holt; the exposition of "Ideal Living," a pleasant open-spaced affair, by T. Th. Wijdeveld; radio station at Hilversum by Duiker, Merkelbach, Karsten; a very personal and original house, with a handsome play of pitched roofs—one of them like a grandstand—by the engineer J. W. C. Boks.

Denmark. Among many unpretentious and freely conceived structures were two modest houses, one by Frits Schlegel for himself near Copenhagen, another by Arne Jacobsen. The open-air school at Sundby for children of delicate health, by K. Gottlob, made numerous plan innovations.

Finland. By the end of 1939 damage from air bombardments had apparently not been extensive; this was fortunate from an architectural as well as a humanitarian viewpoint, since the cities of southern Finland in their rapid growth had made use of a very high average of very up-to-date designing. Typical recent apartments at Helsinki were those by V. Leisten; a handsome group, 7 stories in height plus roof-terrace, by Aalto, Kokko, & Saari; a somewhat bizarre one, the zig-zag balconied front by Aalto, Kokko; nice detail in a small apartment was executed by Dag Eglund. The new municipal bus station at Abo, by the municipal building office, might well serve American cities as an example; also at Abo was the headquarters of the Sampo mutual life insurance company, by E. Bryggman: behind an unostentatious exterior it enclosed a skilfully handled plan managing a diversity of facilities such as offices, arc hives, lunchrooms, and a rented restaurant, with a richly varied use of materials and forms.

Japan. Japanese architects could design European architecture as well even as an Italian, witness the Osima Meteorological Observatory, by Sutenu Horiguti, or the Keio-Gidynku Dormitory near Tokyo by Y. Tarriguti. The grandstand of the Kyoto racetrack at Kyoto, by T. Yasui, had a more northern flavor. A building like the Meijiseika Tea Parlor, by J. Watanabe, suggested Japanese influences gone abroad from whence they again influenced the homeland back again. Among houses, a retreat for Akamatu at Jugawara, by Yoshiko Dusi, thatched covered, based throughout on the Japanese mat module, used European details without conflict; the Yamazaki house, by T. Kurata, was pleasantly Japanese traditional; a hilltop studio for the artist Tuzi at Hakone by Eizo Sugawara was a picturesque agglomeration of European rustic wooden types handled with Japanese delicacy.

DOUGLAS HASKELL.

ARCTIC EXPLORATION. See POLAR RESEARCH.

ARGENTINA. A federal republic of South America, consisting of 14 Provinces, 10 Territo-

ries, and the Federal District, which includes the capital, Buenos Aires.

Area and Population. Land area, 1,079,965 square miles. Population, 12,958,217 (estimated) on Dec. 31, 1938, compared with 7,885,237 at the 1914 census. Living births registered in 1938 numbered 293,989 (24.1 per 1000); deaths, 148,435 (12.0); marriages, 85,015 (7.0); excess of immigrants over emigrants, 34,708. Estimated populations of the chief cities on Jan. 1, 1938, were: Buenos Aires, 2,317,755 (2,470,000 on Jan. 1, 1939); Rosario, 511,007; Córdoba, 288,916; Avellaneda, 230,775; La Plata, 190,577; Santa Fé, 143,327; Tucumán, 140,000; Bahía Blanca, 108,310.

Education and Religion. About 16 per cent of the adult population was estimated in 1939 to be illiterate (less than 2 per cent in the federal district). The public education budget of about \$37,500,000 for 1940 was more than the aggregate educational appropriations of the nine other South American governments. Argentina's sixth national university was opened at Mendoza on Mar. 27, 1939. Known as the University of Cuyo, it draws its student body from the provinces of Mendoza, San Juan, and San Luis and has branches at the two other provincial capitals. The other national universities at Buenos Aires, Córdoba, La Plata, Tucumán, and Santa Fé (El Litoral) had 27,885 students in 1937. The Roman Catholic Church is supported by the state; all other faiths enjoy freedom of conscience.

Defense. Defense forces in 1938 included a standing army of 38,400 men; a trained army reserve of 300,000 men in the National and Territorial Guards; military and naval air forces with less than 200 planes in all; and a naval force of 2 old battleships, 3 cruisers, 4 old coast defense vessels, 16 destroyers, 3 submarines, 16 patrol vessels, etc.

Production. Agriculture and stock raising, and manufacturing, are the principal industries. Of the 1938 exports, livestock products accounted for 45.6 per cent by value and agricultural products for 47.4 per cent. Yields of the chief crops in 1938-39 were (preliminary, in metric tons): Wheat, 8,700,000; barley, 440,000; rye, 270,000; oats, 730,000; corn, 5,400,000; potatoes, 952,000 (1937-38); cane sugar, 460,000; linseed, 1,410,000; cotton, 65,000. The 1938-39 wool clip was 174,600 metric tons. The number of animals slaughtered at frigorificos in 1938 was: Cattle, 4,421,439; swine, 1,015,622; sheep, 5,799,990. The chief mineral product is petroleum (2,430,000 metric tons in 1938). Tungsten, lead, zinc, copper, gold, silver, and coal are mined in relatively small quantities. There were 40,613 industrial establishments, with 526,495 employees and executives, at the 1935 census.

Foreign Trade. Exclusive of specie, imports in 1938 totaled 1,460,888,000 pesos (real value) and exports 1,400,294,000 pesos. Leading 1938 imports were (in millions of pesos): Textiles, 287.8; fuel and lubricants, 229.0; machinery and vehicles, 226.8; iron and its manufactures, 129.6. For trade by countries, see 1938 YEAR BOOK. Imports (1939), 1,338,332,000 pesos; exports, 1,570,226,000.

Finance. For 1938 general expenditures totaled 949,700,000 pesos and receipts 934,700,000 pesos. Special expenditures and receipts balanced at 45,900,000 pesos. Budget estimates for 1939 placed general expenditures at 988,785,221 pesos and receipts at 854,319,675 pesos. Stating that it was impossible to appraise the results of the European war upon government finances, the President in-

duced Congress to re-enact the 1939 budget for 1940 with the addition of 43,000,000 pesos for debt service.

National public debt (Dec. 31, 1938), 3,896,600,000 pesos, against 3,770,100,000 on Dec. 31, 1937. The Federal Government during the year assumed 18,500,000 pesos of provincial debt and 54,000,000 pesos of City of Buenos Aires debt. The Argentine paper peso exchanged in 1938 at an average of 3.92 pesos per U.S. dollar on the free market and 3.31 at the official rate.

Transportation, etc. On June 30, 1938, Argentina had 26,531 miles of railway line, of which 6365 miles were state-owned. Early in 1939 the Federal Government acquired the Argentine section of the Transandean Railway, the Córdoba Central Railway, and the Steam Tramway of Rafaela, all owned by British interests. According to the *London Times*, the 280,000 British bondholders with an investment of £277,000,000 in Argentine railways received interest payments averaging 1.6 per cent on their investment in 1938. Highways of all types aggregated 254,646 miles in 1939. It was decided in 1939 to recondition the Transandean railway tunnel to provide for both rail and automobile traffic. The German air line connecting Buenos Aires with Europe suspended operations upon the outbreak of the European war. Early in 1939 the government authorized the Italian air system, "Ala Littoria," to establish air mail and passenger service between Rome and Buenos Aires. Services of Pan American Airways, connecting Buenos Aires with Asunción, La Paz and the principal cities on the east and west coasts of South America, were increased. During 1938 2349 ships of 9,021,010 net registered tons entered all Argentine ports (3245 ships of 11,408,981 tons in 1937).

Government. The Constitution of 1853 vests executive power in a president chosen for a six-year term by 376 electors representing the Provinces and the Federal District. The National Congress consists of a Senate of 30 members elected for nine years by the Provincial legislatures and a Chamber of Deputies of 158 members elected for four years by universal male suffrage. One-third of the Senate retires every three years and one-half of the Chamber every two years. The governors of the Provinces, elected by local suffrage, exercise extensive powers independently of the Federal Government. President in 1939, Dr. Roberto M. Ortiz, who assumed office Feb. 20, 1938.

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Internal Affairs. The nation's main attention during 1939 was concentrated upon combating adverse domestic repercussions of world economic conditions and European ideological and military strife. Among political developments of the year were the suicide of the influential Dr. Lisandro de la Torre, founder of the Progressive Democratic party (see *NECROLOGY*); outbreaks of violence and charges of fraud in connection with the San Juan provincial election on April 30; and adoption by the chief opposition party—the Radicals—of a platform for the March, 1940, Congressional elections emphasizing opposition to fascism and nazism in Argentina and support of President Roosevelt's inter-American policies.

Economic Measures. The high level of prosperity attained in 1937 slumped sharply in 1938, when poor agricultural conditions and a 40 per cent decline in the value of exports caused a falling

off in revenues and general business activity. In 1939, previous to the outbreak of the European war, conditions became worse. The large 1938-39 wheat crop could not be disposed of abroad and the government, under the decree of Nov. 14, 1938 guaranteeing minimum prices for wheat and linseed, purchased the entire crop at a price of 7 pesos per quintal (about 59 cents a bu. f.o.b. Buenos Aires). Prices on the Liverpool market, where the bulk of Argentine wheat is normally disposed of, remained substantially below this level. It was estimated in July that the government was holding about 158,000,000 bu. of wheat representing an investment of 280,000,000 pesos, and that it stood to lose 100,000,000 pesos on the wheat guarantee program by the end of the year.

The Ortiz Government rejected proposals for devaluation of the currency as a way out of its financial dilemma. Government expenditures were drastically pruned. Two internal bond issues totaling 150,000,000 pesos were floated in March. Barter agreements concluded with Italy and Germany reduced the wheat surplus. The policy of rigidly curtailing imports to the level of merchandise exports was extended, while the government continued to take a handsome profit on its exchange control operations. (In 1938 this profit was about \$18,000,000.) Under the system of import control introduced in November, 1938, the Argentine Government reduced imports from the United States and other countries having a favorable trade balance with Argentina to the level of their Argentine purchases. But on Aug. 23, 1939, a new system of "horizontal control by commodities instead of vertical control by countries" went into effect.

Effect of European War. The outbreak of the European war in September markedly changed Argentine economic and financial conditions. There was a sharp increase in prices of import and export products, accompanied by curtailment of trade with the European belligerents. A decree of September 6 ended government support of wheat and linseed prices. Congress passed drastic anti-profiteering and price-fixing legislation covering a wide variety of articles of prime necessity. There was further fiscal retrenchment. Business showed general improvement under the stimulus of higher prices. But both the government and the banks adopted a conservative policy in the face of an incipient war boom, and the country's economic system absorbed the shock much more easily than in 1914. There was some dislocation of established trade channels, including a marked shift of Argentine trade from Europe to the United States. The peso was pegged to the U.S. dollar when the pound sterling began to depreciate. A German-Argentine barter agreement for exchange of Argentine wheat and wool worth 14,500,000 pesos for German railway equipment broke down as a result of the war, after Argentina had shipped wheat valued at 4,600,000 pesos.

Defense and Neutrality. The war in Europe gave powerful support to President Ortiz's policy of strengthening the national defenses. Legislation for expansion of the army, navy, and air force was introduced, but the military program aroused criticism from Gen. Ramón Molina, retired Chief of Staff, on the ground that it would create too many generals and make the army "a pliable instrument of unscrupulous governments." The Argentine Government proclaimed its neutrality in the European war on September 4 and took energetic measures to enforce it. Test flights of German commercial aircraft in Argentina were for-

bidden on September 10 lest they be used to aid the German naval warfare in South American waters. A naval patrol of coastal waters was inaugurated September 15 in collaboration with Uruguay and Brazil. The officers and crew of the German pocket battleship *Graf Spee*, who landed at Buenos Aires after sinking their ship in the River Plate on December 17, were interned by the Argentine Government despite a sharp protest from Berlin.

Anti-Nazi Probe. On Mar. 30, 1939, the Buenos Aires newspaper *Noticias Graficas* published a document purporting to prove that the German Government was conspiring with German nationals in Argentina to annex Patagonia. The document was supplied by Heinrich Jürges, publisher of an anti-Nazi magazine in Buenos Aires, who said that he was a former secretary of Propaganda Minister Joseph Goebbels. It was denounced as fraudulent by the German Embassy and the Argentine Federal Prosecuting Attorney reported on May 4, after a five-weeks' investigation, that its authenticity could not be proved. Accordingly Alfredo Mueller, acting chief of the Nazi movement in Argentina, who had been arrested as one of the signers of the document, was released from prison and the prosecution of Jürges was recommended.

Nevertheless the Prosecuting Attorney's report stated that the investigation had uncovered extensive illicit and unconstitutional activities by the Nazi movement in Argentina that necessitated urgent governmental action. All Nazi organizations in Argentina, it was charged, were headed by appointees of the German Nazi party and completely controlled from Berlin or Munich. The members were organized on a military basis, made regular subscriptions to party funds in amounts dictated by their leaders, were forbidden to use the Spanish language at their meetings or to become naturalized Argentine citizens. They wore Nazi uniforms, engaged in military drill, and excluded Argentine flags from their meeting halls. German laborers in Argentina were obliged to join the German Labor Front, the report continued. Anti-Nazi Germans were ostracized and black-listed. Nazi activities in all sections of the country displayed complete disrespect for Argentina and the laws of the republic and moreover constituted a danger to Argentine sovereignty.

This report and the accompanying anti-Nazi press campaign was followed by a decree of May 15 dissolving the German Nazi party and all other political organizations in Argentina directed from abroad. The decree affected also the Spanish Fascist party in Argentina and two Italian-controlled organizations—the Italian Fascist and *Dopolavoro* groups. The decree permitted foreign organizations to exist provided they banned all foreign political insignia, uniforms, banners, and songs, refrained from activities for or against political institutions of foreign countries, subscribed to "democratic principles" in their by-laws, recorded their names, statutes and by-laws in Spanish, and dispensed with subsidies and donations from abroad. Protests against this decree from the German and Italian governments were rejected by the Argentine Foreign Office.

When Congress convened, all parties agreed that the judicial investigation into Nazi activities in Argentina was incomplete. On July 7 the Chamber voted 77 to 4 to authorize a legislative investigation of all foreign political activities hostile to Argentina and its institutions. Meanwhile the

anti-Nazi probe had led to further restriction upon or the closing of German and Italian schools under the decree of June 16, 1938, forbidding the teaching of foreign racial or political ideologies and beliefs contrary to the Argentine Constitution and laws.

Foreign Relations. Due in part to the anti-Nazi sentiment aroused by the foregoing disclosures, Argentine opinion showed itself strongly hostile to Germany when the European war began. Standing on its traditional principle of non-recognition of territorial changes brought about by force, the Argentine Government on October 5 announced that it would refuse to recognize German sovereignty over Poland (q.v.) and would continue diplomatic relations with the Polish provisional government.

On the other hand Argentina on September 10 formally protested the inclusion of foodstuffs on the British and French contrabrand lists. The disruption of Argentina's trade with the Reich by the Anglo-French blockade and the failure of the Allies to purchase Argentine wheat and meat in the quantities and at the prices expected caused a cooling of Argentine enthusiasm for the Allied cause. This trend was increased by charges that the British were violating Argentine neutrality by recruiting British residents of Argentina for the Falkland Islands military defense force. In the middle of October an unofficial committee composed of many leading Argentines and headed by the Socialist Senator, Alfredo Palacios, was organized to push Argentina's old claim to the Falkland Islands. Following the Soviet attack upon Finland, Argentina on December 4 demanded the immediate expulsion of the Soviet Union from the League of Nations (q.v.).

Pan American Policy. At the Pan American Conference in Lima, Peru, in December, 1938, Argentina led the opposition to Secretary of State Hull's proposals for closer inter-American collaboration (see 1938 YEAR BOOK, p. 566). But in September, 1939, the Argentine Foreign Office was the first American chancellery to put the Declaration of Lima into effect. All American diplomatic representatives in Buenos Aires were called in conference on the eve of the European conflict and informed of the measures Argentina would adopt if war broke out. This consultation was continued during the remainder of the year, being expanded in accordance with the agreements reached at the conference of American Foreign Ministers at Panama.

Argentine collaboration with the other American countries was manifested in various other ways. The Finance Ministers of Argentina, Brazil, Paraguay, and Uruguay met in Montevideo on January 27 to discuss joint fiscal and commercial policies. They recommended that their governments adopt joint measures to control movements of refugees and other immigrants, tighten relations among their Central Banks, and take specific steps to promote trade relations. An Argentine-Brazilian agreement putting some of these recommendations into effect was signed Apr. 14, 1939.

During a visit made by Gen. José Félix Estigarribia, President-elect of Paraguay, to Buenos Aires, six treaties were signed on July 5 that laid the basis for closer economic, political, and cultural relations between the two countries. They provided for the settlement of the dispute over the boundary line between Argentina and the Paraguayan Chaco; the establishment in Asunción of a branch of the government-owned Bank of

the Argentine Nation; and the establishment of facilities for closer cultural and commercial intercourse and for the transit across Argentina of immigrants bound for Paraguay. The important boundary treaty set up a mixed Argentine-Paraguayan commission to trace the true course of the Pilcomayo River, which was designated as the frontier line by President Rutherford B. Hayes of the United States in his arbitral decision of 1878 awarding the Chaco territory north of the Pilcomayo to Paraguay.

In the middle of August President Alfredo Baldomir of Uruguay arrived in Buenos Aires for a five-day official visit, the first paid to Argentina by a Uruguayan President in 30 years. Argentina vigorously supported Chile (q.v.) in the latter country's dispute with Gen. Francisco Franco, dictator of Spain, over the diplomatic asylum granted Loyalist refugees in the Chilean Legation in Madrid. In June Argentina and Colombia raised their respective Legations in one another's capitals to ambassadorial rank.

The increasingly cordial relations between Argentina and the United States continued to encounter obstructions in the form of economic discriminations arising from the competitive nature of the Argentine and United States economic systems. The United States Senate withheld ratification of the treaty removing the ban on imports of Argentine meat products based upon the discriminatory application of sanitary regulations. The Argentine Government, on the other hand, further curtailed imports from the United States in mid-February in line with its trade-balancing exchange control system. However the new import-control plan adopted by Argentina in August removed the discriminatory features of Argentine exchange control as applied to United States goods. This paved the way for the announcement by Acting Secretary of State Sumner Welles on August 23 that the United States planned to negotiate a reciprocal trade treaty with Argentina. There had been more than four years of preliminary discussions. Direct discussion of the trade pact began in Buenos Aires on November 15. A week later the Argentine Government announced a new import policy for the duration of the European War which restricted purchases as far as possible to Great Britain and France. The Allies apparently agreed in return to continue large-scale purchases of Argentine products. This agreement was a factor in the virtual collapse of the Argentine-United States negotiations by the end of the year. The Argentine Government in 1939 renewed the contract of the United States air mission sent to Buenos Aires in 1938.

Antarctic Claims. Another prospective source of Argentine controversy with both Great Britain and the United States was revealed in 1939 when the Argentine Government established a commission to prepare proofs, supporting Argentine claims to Antarctic territories, for presentation to an international conference of polar explorers to be held in Bergen, Norway, in 1940. Argentina claimed possession of all Antarctic territory lying between the 20th and 68th meridians west longitude, including Graham Land, and the South Georgia, South Orkneys, South Shetlands, and Sandwich island groups, all claimed by Britain, and parts of the Antarctic Continent claimed by Britain and the United States (see POLAR RESEARCH).

See also BOLIVIA, BRAZIL, CHILE and URUGUAY under *History*; INDUSTRIAL CHEMISTRY, MILI-

TARY PROGRESS, PAN AMERICANISM, PAN AMERICAN UNION.

ARIZONA. Area and Population. Area, 113,956 square miles; included (1930) water, 146 square miles. Population: Apr. 1, 1930 (census), 435,573; July 1, 1937 (Federal estimate), 412,000; 1920 (census), 334,162. Phoenix, the capital, had 48,118 (1930).

Agriculture. Arizona harvested, in 1939, 612,500 acres; this was somewhat less than the year before, but it exceeded the average of 579,400 for the decade 1928-37. Cotton, on 187,000 acres, made 197,000 bales (estimated farm value, \$10,342,000); tame hay, on 218,000 acres, 475,000 tons (\$3,895,000); wheat, on 35,000 acres, 805,000 bu. (\$620,000). Corn, grain sorghums, dry beans, and other crops were also grown, on a smaller scale.

Manufacturing. Figures published in 1939 by the U.S. Census of Manufactures were as follows, for Arizona in 1937 (corresponding figures for 1935 in parentheses): number of manufacturing establishments, 290 (272); wage-earners there employed, 7193 (4748); wages paid, \$8,602,418 (\$5,033,516); value of products, \$118,355,981 (\$55,456,045); part of this value contributed by manufacture, \$33,634,686 (\$16,172,583). The smelting and refining of copper accounted for \$79,601,203, or much the greater part, of the value of all the manufactured products of Arizona for 1937; the smelters and refineries occupied 2262 of the manufacturing wage-earners.

Mineral Production. Mines in Arizona recovered to a great extent from the slump in yearly production that they had suffered in 1938. Their aggregate output of gold, silver, copper, lead, and zinc rose to \$72,433,400 (1939; preliminary approximation), from \$58,358,401 (1938). The output of ores of copper increased in metallic equivalent to 518,400,000 pounds (1939), from 421,594,000 (1938); in metallic value to \$53,913,600, from \$41,316,212. The yearly yield of gold advanced to 323,000 ounces (1939), from 305,043 (1938); in value, to \$11,305,000, from \$10,676,505. That of silver, to 7,975,540 ounces (1939), from 7,479,153 (1938); by value, to \$5,413,700 from \$4,835,008. The corresponding value for output of lead in 1939 was \$1,075,000; for that of zinc, \$726,100. Preparatory work at the Morenci mining property of the Phelps-Dodge Corporation on a new body of ore and on equipment for concentration was opening the way in 1939 for a future additional production of copper in the State.

Political and Other Events. Gov. Robert T. Jones took office in January. A dispute with New Mexico over the use, for irrigation, of water of the upper Gila River, in the latter State, came to a head when an official reported as acting on order of Governor Miles of New Mexico (January 4) forced the padlocks that closed the outlets for this water to the area around Virden, just east of the Arizona border. The padlocks had been affixed in October, 1938, by order of the Federal District Court in Arizona and in accordance with the purpose of the Federal water commissioner for the Gila River, to conserve water that the Indians of the Pima Reservation, in Arizona, would need for their agriculture. The Federal Government was consequently a party in the dispute and in the subsequent moves for its termination. The Federal works in the Gila River were increased later in the year by preparations for the placement of three pumping units designed to lift water from the main gravity canal of the

Gila project, and thus supply irrigation to the Yuma Desert, in southwestern Arizona.

The 400th anniversary of the white man's discovery of Arizona (which the Spanish Franciscan Marcos de Niza had entered in 1539), was celebrated at divers dates and in various parts of the State; at Lochiel a memorial stone shaft bearing inscribed bronze plates, one in Spanish and one in English, was dedicated April 16; Tucson held a pageant, April 27.

Investigators reporting to WPA Administrator Harrington on the condition of migratory workers in the Western cotton States were quoted (September 30) as finding that the greater part of those questioned in Arizona had been drawn there by persuasive advertising, but that few of them had found it possible to earn an adequate income at cotton picking.

Drought in the Navajo Indian reservations (lying chiefly in northeastern Arizona) cut down the food supply of these Indians and necessitated plans to give them special public aid in the winter.

Officers. Arizona's chief officers, serving in 1939, were: Governor, Robert T. Jones (Dem.); Secretary of State, Harry M. Moore; Treasurer, William Petersen; Auditor, Ana Frohmiller; Attorney-General, Joe Conway; Superintendent of Public Instruction, H. E. Hendrix.

ARIZONA, UNIVERSITY OF. A coeducational State institution of higher learning in Tucson, Ariz., founded in 1855. The 1939 autumn enrollment totaled 2666, of whom 1757 were men and 909 women; the registration for the summer session of 1939 was 857, of whom 471 were men and 386 women. The faculty numbered 213. The income for 1938-39 was \$1,907,136 and the amount of endowment \$48,136. The library contained 131,365 volumes. The construction of the new Douglas Memorial Mining and Metallurgical Building, the gift of the Phelps-Dodge Corporation, was begun in September, 1939. President, Alfred Atkinson, D.Sc.

ARKANSAS. Area and Population. Area, 53,335 square miles; included (1930) water, 810 square miles. Population: Apr. 1, 1930 (census), 1,854,482; July 1, 1937 (Federal estimate), 2,048,000; 1920 (census), 1,752,204. Little Rock, the capital, had (1930) 81,679 inhabitants.

Agriculture. Arkansas harvested, in 1939, 6,093,000 acres of principal crops: about 8 per cent less than the average for the decade 1928-37. Cotton, on 2,125,000 acres, made 1,410,000 bales (\$62,040,000 in estimated value on the farm); corn, on 2,085,000 acres, 32,318,000 bushels (\$21,330,000); tame hay, on 991,000 acres, 1,080,000 tons (\$8,532,000); rice, 171,000 acres, 8,721,000 bu. (\$6,628,000); potatoes, 39,000 acres, 3,003,000 bu. (\$2,312,000); sweet potatoes, 40,000 acres, 2,680,000 bu. (\$2,278,000); oats, 132,000 acres, 2,904,000 bu. (\$1,133,000).

Manufacturing. Manufacturing establishments in Arkansas numbered 1048 in 1937; employed 37,280 wage-earners (in 1935, 29,026); paid \$24,734,112 in wages (in 1935, \$17,327,951); and produced goods to the value of \$164,676,277 (in 1935, \$119,340,868), to which sum they contributed by manufacture \$65,587,347 (in 1935, \$45,232,560). The wood-working industries, first in importance, furnished about \$48,000,000 of the total value of manufactured products.

Mineral Production. The moderate recovery in the yearly total of the production of petroleum, made in 1937 after some 12 years of decline, became much sharper thereafter, the annual total

jumping to 18,077,000 barrels (1938) from 11,764,000 for 1937. The increment to the total came chiefly from the Schuler field and in less part from the Rodessa field. Some new discoveries were made in 1938; the Magnolia field, in Columbia County, was judged the most important. The yield of natural gas also increased, jumping to some 20,557 million cu. ft. for 1938, from 12,485 million for 1937. Of 1937's total, the oil wells contributed rather more than gas wells, and 9690 million cu. ft., or the greater part of the year's total, was delivered to consumers; this quantity had a value of \$1,984,000 at the points of consumption, but of only \$637,000 at the wells. The State's moderate production of coal dropped to some 1,192,000 net tons for 1938, from 1,511,000 for 1937. While Arkansas continued to furnish all but a small part of the bauxite (clay used as the source of aluminum) its shipments fell to 293,280 long tons (1938) from 402,105 (1937); in value, to \$1,679,663, from \$2,322,861.

Education. In Arkansas the inhabitants of school age were stated, for 1939, as 635,028. For the academic year 1938-39 enrollments of all pupils in the public schools numbered 362,780 white and 115,544 Negro; in the elementary group (grades 1 to 8) the enrollments amounted to 298,586 white and 109,082 Negro; in high schools (grades 9 to 12), the totals were 64,194 white and 6,462, Negro. Expenditure of the year 1937-38, for public-school education totaled \$15,254,352. Teachers of whites numbered 10,240; teachers of Negroes, 2498.

Legislation. The Legislature held a regular 60-day biennial session, beginning in January. At the recommendation of Governor Bailey it gave the State an act to permit a preferential primary for registering the vote on potential candidates for President; however, as it came from the Legislature, the bill for such a primary raised no vivid likelihood that an actual primary would ever take place, for it required that some intending candidate not only apply for the election, but put up, through a party's State committee, the estimated cost of \$75,000. The prices of automobile and motor-truck licenses were reduced, but the small charge for the driver's license was somewhat increased, to 50 cents. Measures were voted to repeal the enactment of 1937 for a State system of civil service. With a view to furthering the Governor's plans for refunding the State's \$142,000,000 of highway bonds at lower interest, the Legislature appropriated out of the cash balance \$4,000,000, to be used, with subsidiary credit from banks, for the purchase of a considerable quantity of the bonds.

The session enacted a system of workmen's compensation, compulsory on the employer and providing payments in the case of accident, occupational disease or poisoning when connected with the sufferer's employment; Arkansas was the 47th State to adopt workmen's compensation.

In accordance with a constitutional amendment adopted in 1936 and now going into effect the members of the State Senate were divided at the outset of the session, into two groups, one to serve for two and the other for four years; in executive meeting the Senators settled by lot who should hold the 18 seats having an incumbency of 2 years and who should get the 17 seats good for 4 years.

Political and Other Events. Governor Bailey entered his second term on January 10; at his inaugural he recommended the abolition of the

State's system of convict farms, the enactment of a system of workmen's compensation for injury incurred in the course of employment, and the furnishing of free textbooks to pupils in the high schools. Better economic conditions in the State prevailed through the greater part of the year; retail sales, affording an indication of the purchasing power of the population, ran higher than in 1938, the months' totals of the current year generally exceeding those for corresponding months of 1938 by a higher percentage than the average for States reporting such figures. A considerable addition to the system of improved highways was made by the completion, early in the year, of the paving of the State's part of Route 67, the shortest road between Dallas and St. Louis.

Officers. The chief officers of Arkansas, serving in 1939, were: Governor, Carl E. Bailey (Dem.); Lieutenant-Governor, Bob Bailey; Secretary of State, C. G. Hall; Treasurer, Earl Page; Attorney-General, Jack Holt; Land Commissioner, Otis Page; Auditor, J. Oscar Humphrey.

ARKANSAS, UNIVERSITY OF. A coeducational State institution of higher learning in Fayetteville, Ark., founded in 1871, with a School of Medicine in Little Rock. In the fall of 1939 the total enrollment was over 2700 and for the summer session it was 896. The number of faculty members was 215. The endowment amounted to \$132,000, while the income for the year was estimated at \$1,400,000 (including medicine). In addition the University received large sums for work in agricultural extension. The library contained approximately 153,000 volumes. President, J. W. Fulbright, inducted September, 1939.

ARMAMENTS, COST OF. Even before the outbreak of the European War (q.v.) in September, 1939, the rapidly rising cost of world armaments had aroused widespread concern. The Bank for International Settlements at Basle, Switzerland, on May 12, 1939, estimated that the world was spending \$1,000,000,000 each month on armaments and that the total cost in 1938 was six times greater than in 1928. In a report presented to the International Chamber of Commerce in Copenhagen on June 27, Louis Marlio estimated the combined armament bills of Germany, Great Britain, France, Italy, and Japan for 1938 at \$12,000,000,000. John G. Winant, director of the

history. These armament expenditures were only a fraction of total national defense costs.

Speculation as to the extent of German armament costs, which were not made public after 1934-35, was set at rest to some extent by Chancellor Hitler's speech to the Reichstag on September 1, when his armies were marching into Poland. He then announced that his government had spent 90,000,000,000 marks (about \$36,000,000,000) on arms and military preparations of all kinds since it was established in January, 1933. (Italy spent \$6,930,612,000 for arms since 1922.) In 1937 German armament costs were estimated at about 15 per cent of the national income, as compared with about 11 per cent for France, 6.6 per cent for Britain, and 1.4 per cent for the United States. French national defense costs for 1939 were estimated before the outbreak of war at about 40,000,000,000 francs, or more than 40 per cent of the budget.

After the outbreak of war, all of the great powers and many of the smaller countries greatly increased their armament expenditures. At the beginning of November the *London Economist* estimated Great Britain's annual war outlay at £4,200,000,000, as compared with £2,696,000,000 in the fiscal year 1917-18. In July, 1939, before the war began the Chancellor of the Exchequer placed defense costs for the year at £730,000,000 out of a total national income estimated at £6,000,000,000. Regular and emergency national defense appropriations in the United States budget increased from \$1,139,878,687 in 1938-39 to \$1,519,458,388 in 1939-40 and to an estimated \$1,839,769,860 in 1940-41. Including all projects and activities of a military or semi-military nature, the defense bill for 1940-41 was estimated at more than \$2,000,000,000. See PUBLIC FINANCE.

In his I.L.O. report cited above, Mr. Winant warned that "rearmament cannot continue at the present rate of acceleration without eventually absorbing so much of the national income of many countries as will prove intolerable." He predicted that it would cause "actual starvation in the lower income groups." The Economic Committee of the League of Nations, in its report to the Council published July 4, admitted that heavy armament expenditures might in some cases have an immediate beneficial effect through wider distribution of purchasing power. But it held that

EXPENDITURES ON ARMAMENTS BY CHIEF POWERS
(In millions, national currency; excluding ordinary pensions)

Country (currency)	1933-34	1934-35	1935-36	1936-37	1937-38	1938-39
France (francs)	12,324.3	10,802.7	10,982.6	8,276.6	9,522.5	11,064.3
Germany (reichsmarks)	671.7	894.3	(c)	(c)	(c)	(c)
Italy (lire)	4,823.8	5,391.4	16,401.2	4,677.3	5,592.9	6,363.4
Japan (yen)	872.6	941.8	1,033.0	1,078.2	1,411.2	1,246.8
United Kingdom (£)	93.5	99.1	122.3	172.3	261.6	326.6
United States (\$)	544.4	712.3	913.3	950.0	1,009.7	1,139.9
U.S.S.R. (roubles)	5,000.0	8,200.0	14,815.5	17,481.0	27,044.0	—

* Information not available.

International Labor Organization, in his annual report made public May 30, 1939, estimated the world's annual armament bill at \$16,000,000,000. An estimate at the year end placed this total at \$20,000,000,000.

The accompanying table from the League of Nations *Armaments Year Book* shows the expenditure on armaments of the chief world powers after the establishment of the National Socialist regime in Germany in January, 1933, inaugurated the most costly armaments race in the world's

the expenditures, if continued, must inevitably lower the living standard of the populations concerned. The Committee also emphasized the difficulties certain to arise in making the transition back from a wartime economy to a peacetime basis when the limitation of armaments again became feasible.

See also the separate articles on each country under *Finance* and *History*; *AERONAUTICS* under *Military Aviation*; *BUSINESS REVIEW*; *EUROPEAN WAR*; *MILITARY PROGRESS*; *NAVAL PROGRESS*.

ARMENIAN APOSTOLIC CHURCH IN AMERICA. See RELIGIOUS ORGANIZATIONS.

ARMENIAN SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R., on the southwestern border between the Black and Caspian Seas. Area, 11,580 square miles; population (Jan. 17, 1939), 2,281,599. Erivan, the capital, had 150,000 inhabitants. In 1937 the area under cultivation was 1,079,000 acres and 90 per cent of the farms had been collectivized. Cotton, wheat, barley, oats, and grapes were the main agricultural products. There are plants engaged in manufacturing chemicals, cement, soap, clothing, boots and shoes, silk, flour, leather, and synthetic rubber. Many hydro-electric stations have been built. In the Lake Sevan hydro-electric development consisting of 9 stations along the 60-mile descent of the Zanga River with a total capacity of 500,000 kilowatts, the station at Kanakir (capacity 88,000 kw in 1939) has been completed and another station (capacity 144,000 kw) is under construction. See UNION OF SOVIET SOCIALIST REPUBLICS.

ARMY AIR CORPS. See AERONAUTICS.

AROSEMENA, JUAN DEMÓSTENES. President of Panama, died at Penonome, Panama, Dec. 15, 1939. Born in 1879, he was educated at Santa Familia School and at Padres Escolapios College. He worked in Ecuador as a confidential clerk for a company building a railway from Guayaquil to Quito until 1903 when he returned to Panama. He entered political life and served in minor positions in the ministries of War and Navy and in Public Instruction and Justice. In 1906 he served as secretary of the National Assembly and of the Supreme Court of Justice and two years later became a High Court Judge. He represented his government at the Madrid Postal Congress in 1920, and was governor of Colón province during 1922. His first cabinet position came in 1928 when he became minister of Agriculture and Public Works and Foreign Minister, in the cabinet of his brother F. H. Arosemena. He was out of office in 1930, but two years later was reappointed foreign minister in the cabinet of President Arias. In 1935 he assumed the ministries of Development and Public Works and Government and Justice. He resigned in 1936 to run for president as the coalition candidate of the National Revolutionary, National Liberal, and Conservative parties.

Elected the 16th president of Panama at the elections of June 7, 1936 for a four-year term, Dr. Arosemena was inaugurated on October 1. During his regime he worked for the ratification of revised treaties between the United States and Panama, in which he was successful in July, 1939, winning for Panama joint responsibility with the United States for maintaining the safety of the Panama Canal (see PANAMA under *History*); advocated the extension of the government's free trade policy, and the promotion of agriculture; and worked on the reorganization of the municipal courts. In 1938 he announced to the National Assembly that he had drafted a new Constitution for its consideration. An ardent advocate of solidarity among the American republics, President Arosemena was host to representatives of the 21 American republics at Panama City in September, 1939, to discuss the effects of the European War on the Western Hemisphere. After the adoption of the Declaration of Panama he was selected to serve formal notification to the belligerents of the establishment of a neutral safety zone around the

Americas. See NEUTRALITY; PAN-AMERICANISM.

During the course of his career, Dr. Arosemena had served as professor of geography in University College (1908-10); was co-founder of *La Palabra*; edited *Diario de Panamá* (1914); was Panamanian delegate to the League of Nations (1939), and chief delegate to the Pan-American Conference at Montevideo (1933). He was a grand commander of the French Legion of Honor and a commander of the Order of Isabel of Spain.

ART EXHIBITIONS. The two great expositions held by San Francisco and New York in 1939 stressed the importance of art, not only through the employment of artists in their creation, but by the character and quality of the exhibitions which were set forth and featured. In the exposition on man-made "Treasure Island," San Francisco Bay, these exhibitions were under one roof, whereas in the Fair on the Flushing Meadows, Greater New York, the works of the Old Masters, and those of contemporary artists were housed in separate buildings.

The collection of "Masterwork of Five Centuries" in San Francisco was assembled by a special committee, headed by Dr. Walter Heil, and appointed by the Exposition Management. Its 181 items were mostly borrowed from national collections in Europe, and included such world-renowned paintings as "The Birth of Venus" by Botticelli and the "Madonna of the Chair" by Raphael. Also of great interest here was an exhibition of art illustrating Pacific Culture consisting of about 1500 specimens, collected in China, Japan, Korea, the Pacific Islands, Ecuador, Peru, Central America, and Mexico. The contemporary art shown was both American and foreign and included, 457 paintings and sculptures reflecting modern trends. Finally, there was an exhibition of Decorative Arts—bookbinding, ceramics, metal work, textiles, etc., 968 examples. The attendance at the art building in San Francisco was larger than at the two buildings in New York, but this may have been because of more diversified interest, the fact that the West Coast Fair opened earlier and so had longer to run, and that such an exhibition as this had never before been held in the western section of the country.

The "Masterpieces of Art" exhibition at the New York World's Fair was organized and financed by a group of public-spirited individuals, profoundly impressed by the educational potentialities of such a display. These "friends of art" erected the building and met all costs, only about half of which were covered by the 440,000 paid admissions. The 446 exhibits, chiefly paintings but also a few works in sculpture, were selected by Dr. William R. Valentiner and lent by Art Museums and private collectors at home and abroad. That the majority of them came, however, from collectors in this country went to show how incalculably rich the United States has become in recent years in the great works of art of the past. Incidentally, the insurance value carried by the Old Master collection in San Francisco was \$20,000,000; that by Masterpieces at the New York Fair, \$30,000,000. Obviously in both instances they were priceless, but this fact and their high valuation created a problem, when, at the close of the expositions, war having broken out in Europe, foreign lenders requested that their loans be indefinitely extended until the hazard of transportation by sea became again nominal. The solution was a division of responsibility among a group of American museums and a pooling of in-

terests. The Italian paintings from both Fairs were sent directly to Chicago where they were exhibited in the Art Institute through December, while the paintings from the North Countries were shown at the same time in Detroit. During this time arrangements were consummated for sending both collections on circuit to other institutions able to display them safely and meet costs. The attendance at the exhibition of Italian paintings in Chicago was enormous, the galleries so crowded at all times that it was difficult to see the pictures.

The exhibition of "American Art Today" at the New York World's Fair was supposed to be a cross section of current production and much emphasis was placed upon the fact that it came from every state in the Union. Its director was Holger Cahill, head of the WPA Art Project, by whom, with the co-operation of regional juries throughout the country, it was selected from 25,000 works submitted. The exhibits consisted of paintings, prints, and sculpture.

Several of the nations which had pavilions of their own at the New York World's Fair set forth notable art exhibitions. France, for example, gave over the whole second floor of her pavilion to a display of five centuries of French history as illustrated by "Five Centuries of French Art." This took the form of 11 period rooms, perfect in appointments, on the walls of which hung famous paintings from the Louvre and other French museums.

Collaborating with the Fair Management, several of the Art Museums in New York set forth, in the summer of 1939, special exhibitions for the benefit of Fair visitors from out-of-town. The Metropolitan Museum of Art exhibited a collection of approximately 300 paintings by American artists illustrating "Life in America" from the 17th to the 20th Century, a most interesting survey, well calculated to engender pride as well as favorably re-establish in memory the much derided "horse and buggy" days. Of the 145 lenders to this exhibition 78 were private individuals. The National Academy of Design, founded in 1825, held from May 8 to July 25 a retrospective exhibition of works by its members, from that of its first president, Samuel F. B. Morse, the inventor, to those by Academicians of today. This display comprised not only paintings and sculpture but prints and architectural design.

"Art in Our Time" was the title of an exhibition which marked the opening of the Museum of Modern Art's new building and the tenth year of its existence, but was also planned for the delectation of visitors to the New York World's Fair. Included with works by the French modernists, which were in greatest abundance, were paintings by such "American old masters" as Homer, Eakins, Ryder, Whistler, and Mary Cassatt. Sculpture was chiefly shown in the garden—a special feature—as well as exhibits of housing, furniture for the modern home, plumbing, folk and child art, moving-picture films, and still photography.

The Pierpont Morgan Library, New York, in contrast, called attention to the art and craft of the past by a special exhibition of finest book bindings, illuminations, hand printing, drawings by the old masters, and engravings, together with a few examples of masterpieces of painting, sculpture, stained glass, tapestries, etc. used to create an intimate and appropriate setting.

The American Academy of Arts and Letters,

New York, opened in May and continued throughout the summer a special exhibition of the work of two deceased members, E. A. Abbey and Childe Hassam.

Among special exhibitions of unusual note held during 1939 that of Flemish Art, shown first in the Worcester Art Museum, Worcester, Mass., and then in the Philadelphia Museum, was outstanding. This exhibition, sponsored by the Belgian-American Educational Foundation, was made up largely of paintings lent by the Belgian Government and brought to the United States solely for the purpose of temporary display in these two cities. It was opened ceremoniously by the Belgian Ambassador in Worcester on February 23 and closed in Philadelphia, April 26. The attendance in Worcester during the first 18 days that it was on view was 64,400.

Under the patronage of the Dutch Government, the Museum of the Rhode Island School of Design, in Providence, set forth in January the most notable exhibition of Dutch paintings of the 17th century shown in America since the Hudson-Fulton Exhibition at the Metropolitan Museum of Art in 1909. The following month the Detroit Institute of Art showed a very fine collection of Dutch Landscape Paintings assembled from American collections, both public and private.

In celebration of the two thousandth anniversary of the birth of Gaius Octavius, the Emperor Augustus, the Metropolitan Museum of Art, in January, 1939, placed on exhibition a collection of sculpture of the Augustan Age. A number of these works were lent by the Louvre, others were drawn from the Museum's own collection and from those of sister institutions in this country.

Under the title "Three Thousand Years of Chinese Jade" an inestimably rich collection of the art of China in this media was exhibited through the generosity of collectors at home and abroad in the Arden Galleries, New York, in January. In these same Galleries, later, a collection of art treasures from the Forbidden City, Peking, was shown. This exhibition, sponsored by Mrs. Chiang Kai-Shek, was in the interest of the Chinese War Orphans Fund.

The most comprehensive exhibition ever assembled of the works of William Blake was held in the Philadelphia Museum, February 11 to March 20. Drawn from public and private collections, chiefly in this country, it included some newly discovered examples. In April, this same Museum held a notable exhibition of engraved portraits by Nanteuil which comprised 230 superlative proofs, bequeathed by Ellis Ames Ballard.

An exhibition illustrating "Expressionism and Related Movements in Art" was held by the Cleveland Museum of Art in February, assembled from various sources. In March, the Museum of Fine Arts, Boston, under the auspices of the Institute of Modern Art of that city, held an exhibition showing the "Sources of Modern Art." An exhibition comprising about 70 works in sculpture by Charles Despiau and Aristide Maillol was also sponsored in Boston by the Institute.

Largely attended and much discussed was a huge exhibition of the works of Pablo Picasso, covering his production during 40 active years, which opened in November and continued to the end of the year in the Museum of Modern Art, New York. A retrospective exhibition of Picasso's French colleague, Georges Braque, exponent of cubism and abstract painting, was held at the



Courtesy, Washington Star

"THE PICNIC"

By Stow Wengenroth

A lithograph awarded the Mary S. Collins Prize at the 11th Annual Exhibition of the Philadelphia Print Club



Courtesy, The Library of Congress

"THE CANTERBURY PILGRIMS"

By Ezra Winter

A section of the mural painting in one of the reading rooms of the Library of Congress Annex

ART



Courtesy, Trustees, National Gallery of Art

"MADONNA AND CHILD"

By Carlo Crivelli
(Venetian, c 1430-1495)

One of the paintings in the Samuel H. Kress Collection given to the National Gallery of Art, Washington, D. C.



Courtesy, Art Associates, Inc

"MADONNA"

By Jan Van Eyck
(Flemish, c 1380-1440)

This painting, valued at \$250,000, was lent by the National Gallery of Victoria, Melbourne, Australia, to the "Masterpieces of Art" Exhibition at the New York World's Fair, 1939

Phillips Memorial Gallery in Washington in December. Also of more than usual significance was an exhibition of "Designs and Models for Mural Paintings and Sculpture for Federal Buildings," held in the Corcoran Gallery of Art at Washington under the auspices of the Division of Fine Arts of the Public Buildings Administration, Federal Works Agency, November 2 to 21. Under the title "Frontiers of American Art," a comprehensive exhibition of paintings, prints, etc., produced under the aegis of the Works Progress Administration was held in the de Young Memorial Museum, San Francisco, during the summer of 1939.

In addition to all these and a special exhibition of works by "Twentieth Century Artists," which featured the reopening of the Whitney Museum of American Art, New York, in September, there were the usual annual or biennial exhibitions held by professional organizations and art institutions all over the country according to custom, at many of which numerous awards in cash prizes, as well as medals, were given—to say nothing of the endless displays held in dealers' galleries and at WPA Art Centers throughout the country—many of which were of considerable note.

During the summer of 1939 several very important exhibitions were held in Europe—to which, incidentally, American Art Museums and private collectors made generous loans. These were: an exhibition of works by "Leonardo da Vinci and His School," held at Milan; one of the works of Paolo Veronese, at Venice, and one of the works of Hans Memling at Bruges. Also during June, July, and August paintings which had been sent from the Prado at Madrid to Switzerland for safety during the Spanish war were exhibited in Geneva—and then returned.

LEILA MECHLIN.

ARTILLERY. See MILITARY PROGRESS.

ARTISTS. See MUSIC; PAINTING; SCULPTURE.

ART MUSEUMS. The number of Art Museums increased in 1939, as well as, in most instances, attendance records; but there was, with but few exceptions, a marked falling-off in individual supporting memberships and in gifts of money applicable to administrative costs. Obviously this may have resulted from various causes, such as the instability of the financial outlook and general world unrest, but it would seem also to indicate a growing feeling on the part of the people that public institutions should be supported from public funds by systematic taxation, probably without thought or realization that taxpayers in the higher brackets are comparatively few and no longer have surplus income to draw on for such benefices.

Partly to compensate for this shrinkage, but more certainly to continue its established program of education in the Arts, the Carnegie Corporation of New York in 1939 made grants totaling \$214,425 to Art Museums, and \$697,150 to Universities, Colleges, Art Institutions, and Schools (to which the Museums are auxiliary) for advancement of knowledge and appreciation in this field. Frederick P. Keppel, President of the Corporation in his annual report called especial attention to the "shift in emphasis from custodial function of the American Museum to its opportunities for educational and other services," which he declared to be "now everywhere an ac-

complished fact." The publication of a three-volume survey of *The Museum in America*, by Laurence Vail Coleman, director of the American Museums Association, was termed by Mr. Keppel "an outstanding event of the year."

The greatest gift to any Art Museum, not only of 1939, but of many preceding years, was that of the Samuel H. Kress Collection of Italian Art to the National Gallery of Art in Washington, announced July 12. This collection, one of the finest of its kind in the world, comprises 375 paintings and 18 works in sculpture from the 13th to the 18th century. Assembled with the utmost care and expert judgment, each item upholds a high standard, fully in accord with that of the works by Italian masters included in the Mellon collection and given to the Nation. The Kress paintings will be turned over to the trustees of the National Gallery of Art when the building now under construction is completed in 1940. At a meeting of the trustees of the National Gallery of Art in July, 1939, Mr. Kress, and also Mr. Joseph Widener of Philadelphia were elected members of the Board.

By the end of the year the exterior of the National Gallery of Art, located on the Mall, in Washington, was practically completed, and work on the interior was started. Meanwhile the administrative staff was wisely augmented, and a large appropriation made by Congress for furnishings, etc.

Under authority of Congress steps were taken in 1939 to secure a plan for a Smithsonian Gallery of Art which will eventually bear the same relation to the National Gallery of Art as the Luxembourg bears to the Louvre. From a vast number of designs submitted, those by Eliel Saarinen were awarded the first prize of \$7000.

On May 10, the Museum of Modern Art, New York, took possession of its new two million dollar building at 11 West 53rd Street, designed on very modernistic lines, by Edward Stone and Philip Goodwin. This building, of structural steel frame, has glass walls, galleries with movable screens, the most up-to-date lighting, is air conditioned and essentially functional. The ceremonies of the formal opening were of a popular nature and broadcasted. Upon this occasion Nelson Rockefeller was installed as president succeeding Mr. Goodyear, and an exhibition entitled "Art in Our Time" was opened. The attendance during the first six weeks after the opening was approximately 90,000.

The Albright Gallery, Buffalo, received in January 1939, from its president, Mr. Seymour H. Knox, a gift of \$100,000 to establish a Room of Contemporary Art to serve as a testing ground of the art of today, with the understanding that works purchased might be resold if, after fair trial, they were not found worthy of permanent preservation.

On January 18, the Metropolitan Museum of Art opened its remodeled Hall of Medieval and Renaissance Armor, which now has a high apse with side aisles and clerestory opening into various minor galleries. The collection which it displays was at the same time enriched by 153 items from the Giulia P. Morosini bequest.

During the summer of 1939 the Whitney Museum of American Art, New York, added four new galleries, incorporated a new lighting system and made other structural changes. At the time of reopening announcement was made that in the eight years of its existence this Museum had

spent \$203,681 for works by contemporary artists—44 works in sculpture, 154 oil paintings, 163 water colors, 85 drawings, and 374 prints.

The Solomon R. Guggenheim collection of non-objective art, to which 400 items were added in 1939, was opened to the public in May at 24 West 54th Street, New York.

On October 16, the Philbrook Art Museum in Tulsa, Oklahoma, was opened. This building, formerly the residence of Mr. and Mrs. Waite Phillips, was so remodelled that it provides 17 galleries. It stands in a 23 acre park and is administered jointly by the South Western Art Association, the University of Tulsa, and the City of Tulsa.

Through the Louise Caldwell Murdock Trust Fund, the Wichita Museum of Art, Wichita, Kansas, purchased eight paintings in 1939 by well known contemporary American painters.

The Art Museum of Portland, Oregon, begun in 1892 with a gift of \$10,000, and at the present time with assets of \$2,550,000, added a new wing at the cost of \$200,000 from the Ella Hirsch Fund—a bequest of \$850,000.

The Art Institute of Chicago opened a new gallery in 1939 for recent accessions. The Philadelphia Museum opened four new galleries for general purposes, and also installed and opened to the public on December 16 the magnificent Louis XVI drawing room from the home of Mrs. Hamilton Rice of New York which, with its contents, is valued at over \$2,500,000.

The Lyman Allyn Museum of New London, Conn., added a wing in 1939, at a cost of \$40,000, to house and display the Palmer collection of 18th century English and American furniture, paintings, silver, and jewelry, bequeathed, together with building costs, by Virginia Palmer.

Among notable gifts to American Art Museums during this year were the sum of \$365,000 to the Rochester Memorial Museum, Rochester, N. Y.; a valuable collection of 54 paintings given to the Museum of Fine Arts, Boston, in memory of Juliana Cheney Edwards by her children; and a bequest of \$400,000 from Mrs. Edith Perry Chapman to the Metropolitan Museum of Art for the purchase of sculpture in bronze.

Several of the leading Art Museums inaugurated in 1939 evening openings, in order to extend the privilege of attendance to working men and women not free during day-light hours. Also in several instances Art Museums made liberal use of the radio to extend their educational programs and reach a wider public.

On Sunday afternoon June 1, 1939, a tiny little painting on a wooden panel, "L'Indifférent" by Watteau, valued at approximately \$80,000, was stolen from the Louvre. A few weeks later the thief himself, a young man who had been doing some work in the galleries wherein it hung, took it to Police headquarters and explained that he had taken it to restore it. The value of the "restorations" was gravely questioned by Louvre officials, but with its return the episode was considered closed.

LEILA MECHLIN.

ARTS, THE AMERICAN FEDERATION OF. A national art organization formed at a convention of representatives of local art museums and associated in Washington, in May, 1909. Its purpose was to unify art interests throughout the country, to provide a channel for the expression of public opinion in matters relating to art, to in-

fluence legislation, to increase interest in and appreciation of art, and bring about a better understanding in everyday life.

The Federation has 500 chapters comprising a membership of more than 325,000 and an individual membership of between 4000 and 5000. It publishes the *Magazine of Art* and also the *American Art Annual* and *Who's Who in American Art*.

The officers were president, Robert Woods Bliss; vice-presidents, George Hewitt Myers, Olin Dows, Grace L. McCann Morley; treasurer, Lawrence M. C. Smith; secretary, Thomas C. Parker, and manager, L. B. Houff, Jr. Headquarters are in the Barr Building, Washington, D. C.

ART SALES. The highest prices brought by paintings in American auction rooms in 1939 were recorded at the sale of the collection of M. Felix Lachovski, of Paris, conducted by the American Art Association—Anderson Galleries, New York, on the evening of April 20. These were \$83,000 given for "The Descent from the Cross" by Hans Memling, formerly in the Podelvskiedzy in Leningrad, and \$60,000 for "The Madonna of the Pinks" a little wooden panel 11 by 8½ inches in dimensions, by Raphael, one time in the collection of the Orloff family of Russia. This was the first time that a painting by Raphael had ever been sold at auction in this country. Both purchases were made by private collectors. The total for this sale alone was \$197,175.

The sum of \$393,796 was realized by the sale of five parts of the William Randolph Hearst Collection, in the Parke-Bernet Galleries, New York, but no records were broken. At one of these sales a portrait of Louis XVIII as Dauphin brought \$13,500 and a portrait of Lady Frances Warren by Reynolds \$10,500.

At the Barry-Hayes-Hepburn sale, conducted by the American Art Association-Anderson Galleries, a portrait of Commodore Barry by Gilbert Stuart sold for \$30,000.

A record was established at the sale of the Hewitt collection in New York when \$11,700 was paid for a first folio, in nine volumes, of Audubon's "Birds of America." At the same sale an original painting by Audubon of one of our native birds fetched \$1700, which, compared with what the artist received for such during his lifetime, was large indeed.

High prices were paid in 1939 for works by William Blake, as for instance \$13,000 for his "Europa—A Prophecy" with 17 brilliant plates and frontispiece "The Creation." His "Songs of Innocence" brought \$9000 at public sale in this country and his "Marriage of Heaven and Hell" \$8800. Dr. Rosenbach was the purchaser of the latter. At Christie's, in London, during the season preceding the outbreak of war, 17 wood blocks, the only ones Blake ever cut, were purchased from the National Art Collections Fund for \$2520. These illustrated Thornton's "Pastorals of Virgil." The British Nation also acquired at the same time a pencil drawing thought to be of "St. John on Patmos" for \$787. Another drawing, "The Infant Christ Praying, with Angels," was purchased by a private collector for \$3150.

An extraordinary price—\$13,500—was paid at an auction in New York for a painting by an unknown artist of "Wall Street in 1820" painted from the corner of Broad Street looking toward Trinity Church, Broadway. At this sale, another historical painting of New York, "View from

Provost and Chapel Streets after the Great Fire," was purchased by the Museum of the City of New York for \$1000.

On the whole there was a drop in prices for works by established masters which found their way to the New York auction rooms in 1939 as indicated by the following figures. Topping the list, with the exceptions already noted, was a "Holy Family with Dove" by Rubens which brought \$12,000; next came a "Portrait of a Scholar" by Frans Hals which sold for \$11,000, after which there was a decided decline. A painting by Corot of "Richmond on the Thames" changed hands for \$1800, a "Beach Scene" by Boudin for \$1150, and a small but important portrait by Sargent at only \$1000.

On the other hand it was reported in July that Rembrandt's "St. John the Evangelist" had been purchased by the Museum of Fine Arts, Boston, at private sale, from the Ringling Museum, Sarasota, for \$85,000. Other noteworthy purchases were: "Madonna and Child" by Verrochio, by Samuel H. Kress from the Clarence Mackay collection, (which in June was placed on private sale with Jacques Seligmann & Co.), and of a French Gothic tapestry from the same collection by the Metropolitan Museum of Art. In these instances the prices paid were not made public.

The outstanding sale of the early winter of 1939-40 was that of the collection assembled by Mrs. Cornelius J. Sullivan, of New York, by Parke-Bernet Galleries, at which a portrait by Cezanne of his wife sold for \$27,500 to a private collector; a portrait of Mlle. Ravoux, by van Gogh, brought \$19,000, and a painting, "Femme dans le Jardin de M. Forest" by Toulouse Lautrec, \$5700. These prices, however, were not comparable to that paid by an American collector for a "Self Portrait" by van Gogh, sold at Lucerne, Switzerland, in the summer of 1939 in a collection of "degenerate art" officially exiled from Germany, which was 175,000 Swiss francs, approximately \$39,000.

A record price was also paid by an American firm for a painting by Whistler in London. This was his well known and highly esteemed "At the Piano," shown at the Royal Academy in 1860, which brought £6405, or over \$32,000. Whistler himself sold it originally for £30.

At Christie's on July 14th an oak panel, "A Hilly River Scene with the Flight into Egypt," (definitely authenticated as the work of Peter Bruegel the Elder, sold for £8190 (the highest price of the year in these sales rooms). A retired British Admiral had picked it up at a country auction a couple of years back for £10 and sold it to the owner of Bladon Castle, Mr. Holbrooke, for £700, after whose death it was offered as a gift to the National Gallery of Scotland and declined, the identity of the artist not having then been established.

A record price was set for a Goya, when, at an auction at Southby's £6800 was paid for his portrait of the Spanish actress, "Dona Antonia Zarat." At the same sale a "St. Catherine" by El Greco brought £3800.

LEILA MECHLIN.

ASBESTOS. The Canadian industry, which accounts for 60 per cent of the world's production of asbestos, worked at full capacity in 1939 on account of war demand and increased consumption in the United States. According to preliminary estimates by the Dominion Bureau of Statistics,

Canadian production in 1939 was 353,151 tons, valued at \$15,454,000, compared with 1938 production of 289,793 tons valued at \$12,890,195. Asbestos is the most important non-metallic mineral produced in Canada (fuels excepted). In 1939 the production was valued at more than half the total of all non-metallics. With the exception of a small production in Ontario, all of Canada's asbestos comes from the Eastern Townships of Quebec.

During the first nine months of 1939 the Asbestos Corporation, Ltd., exported from Quebec 118,654 tons of asbestos valued at \$7,690,565. Exports for this period to the United States were 38,147 tons; to Japan 19,602.

Russia is the second largest producer of asbestos, with Southern Rhodesia third.

Prices of asbestos vary widely according to grade and industrial use. In December 1939, No. 1 crudes commanded the following prices per ton; Quebec, f.o.b. mines, \$700 to \$750; Rhodesian, c.i.f. New York, \$300; Russian, c.i.f. New York, \$275.

The United States produces only a modest quantity of asbestos from mines in Arizona, California, Maryland, Montana, Vermont, and Wyoming. According to *Minerals Yearbook*, 1939, of the Bureau of Mines, the domestic industry offers little promise of large expansion.

H. C. PARMELEE.

ASCENSION ISLAND. See ST. HELENA.
ASHANTI. See GOLD COAST.

ASIA. Excluding the Asiatic part of the Soviet Union, the continent has an area of about 10,345,000 square miles and a population estimated at 1,132,000,000 on Dec. 31, 1938. See the separate articles on ARABIA, CHINA, INDIA, JAPAN, MANCHOUKUO and the other Asiatic states and territories; also ANTHROPOLOGY, ARCHAEOLOGY, EXPLORATION, ETC.

ASIR. See ARABIA under *Saudi Arabia*.

ASOV-BLACK SEA TERRITORY. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

ASSEMBLIES OF GOD, GENERAL COUNCIL OF THE. See RELIGIOUS ORGANIZATIONS.

ASTRONOMY. D. B. McLaughlin has completed an interesting study on the light curves of novae. He calls attention to the widespread belief that typical novae are very rapid in their changes. As a matter of fact, the light curve from the beginning of the rapid increase of light till the light recedes to its initial value varies greatly, and some attempt at classifying them is therefore in order. Some years ago Gerasimovic gave a classification of novae based on their light curves, in which he recognized: I. Slow Novae with subheadings (a) permanent, (b) semi-permanent, (c) proper slow novae, (d) slow with sudden decline. II. Flashing Novae with subheadings (a) flashing novae proper, (b) flashing with rapid fall and partial recovery. McLaughlin uses this classification too, but emphasizes that there is no sharp line of demarcation between classes I and II. McLaughlin lists 85 stars, which include every undoubted nova recorded since 1572 that occurred in our galaxy. He states that there is an element of doubt about four or five in this list and that there are still other doubtful cases, and the total doubted and undoubted are about 110.

Typical fast novae were Nova Persei, 1901, Nova Geminorum, 1912, Nova Aquilae, 1918, Nova Cygni, 1920, and Nova Lacertae, 1936. Each light curve of these novae has just one

principal maximum of light immediately after the steep rise from minimum. On the descending branch of the light curve all show strong upward concavity and moreover all but one exhibited strong fluctuations of light during the decline.

Typical slow novae were Nova Circini, 1906, Nova Scorpii, 1906, Nova Sagittarii, 1910, Nova Pictoris, 1925, and Nova Herculis, 1934. It appears that the slow novae have a very rapid increase in the light emitted by them but the light curve declines much more slowly. The tendency of slow novae to fluctuate irregularly during the early part of the decline is particularly marked.

McLaughlin points out several distinct stages of light variation of a typical nova. The stages he recognizes are: (1) Pre-nova stage, when the star is either constant or irregularly variable through a small range; (2) the initial rise, that portion of the light curve from minimum to within two magnitudes of maximum; (3) pre-maximum halt, where the initial rise is followed by a marked pause or even a decrease; (4) the final rise, when the light curve increases much more slowly than in the initial rise; (5) maximum of light, of brief duration; (6) the early decline, extending from the maximum to within three to four magnitudes of the minimum; (7) the transition; (8) the final decline, when whatever oscillations present are slow and irregular, and (9) the post-nova stage, when the star has receded to its original state. The seventh or transition stage is of three fairly well marked forms (a) a series of strong oscillations, (b) a single broad minimum followed by a recovery of light, and (c) an abrupt change of the curve toward a gentler slope.

Observations for any one nova are not detailed, and this is especially true in the initial stages. McLaughlin lists all novae for which observations are available, according to the stage of the light curve. The average range of magnitude for novae is found to be very close to 10 magnitudes. The rates of decline show a broad and practically continuous distribution and little bunching. The rate of decline is two magnitudes in about 40 days or three magnitudes in 70 days. Arranging novae according to rates of decline shows that slow novae are quite numerous and that there is no true demarcation between fast and slow novae.

McLaughlin points out the need of more accurate light curves and emphasizes the importance that recent and future novae be followed closely throughout the course of their variations.

The McDonald Observatory, located on Mount Locke in the Jefferson Davis Mountains, Tex., was dedicated on May 5, 1939. This observatory was made possible by a bequest of the late William J. McDonald. It has an 82-inch telescope, the second largest in the world, the largest being the 100-inch at Mount Wilson, Calif. (The 200-inch telescope is not yet complete.)

December 4 marked the three-hundredth anniversary of the first observation of the transit of Venus across the sun's disc by Jeremiah Horrocks and William Crabtree. This anniversary was appropriately celebrated.

Phenomena. There were four eclipses in 1939, two of the sun and two of the moon. The first solar eclipse was an annular one visible in the North Polar regions, and the second solar eclipse, although total, was visible only in the South Polar regions. Hence these eclipses excited little popular interest and yielded no observations of scientific value.

The year was very unusual for the observations of comets; 12 were observed as follows:

Comet 1939a. A new comet independently discovered on January 19 by the Russian Kosik and the American Peltier. Its orbit lies wholly inside that of the earth's, though its inclination is very high, viz., 63°.

Comet 1939b. A second new comet was discovered by Väisälä of Finland on February 8. Later observations showed it to be a periodic comet with a period of about 10 years.

Comet 1939c. Pons-Winnecke. This comet was expected to return and was first observed this year on March 17. The Pons-Winnecke is one of the most famous comets, being first discovered by Pons in 1819. Winnecke found it again in 1858, and established that it was the same comet as Pons reported in 1819. Notable changes have taken place in the orbit of this comet since its discovery in 1819. Both the period and the distance from the sun at nearest approach have increased. In 1819 the latter distance was 72,000,000 miles; in 1898 it was 86,000,000 miles; and in 1915 it reached the orbit of the earth. At this comet's return in 1915 its distance from the sun at nearest approach was 3,000,000 miles *outside* the earth's orbit. In 1927 this comet approached the earth within 3,500,000 miles, which is, with one exception (that of Lexell's comet in 1770), the closest approach on record. Between 1927 and 1933 the orbit of Pons-Winnecke moved out 6,000,000 miles more, so that there will be no more close approaches of this comet to the earth. The period of comet Pons-Winnecke is now about half that of the planet Jupiter. In 1942 this comet will approach Jupiter so closely that further changes in its orbit are to be expected.

Comet 1939d. On April 15 a new comet, the third new comet of the year and a very bright one, being of the third magnitude and hence visible to the naked eye, was independently discovered by two Russian amateurs Achmarof and Balesino. Further independent early discoveries were made by no fewer than six other observers. Such a large number of discoveries was to be expected, due to this comet's brightness. It would be impractical to attach so many names to the designation of this comet, and the central bureau of the International Astronomical Union at Copenhagen has decided in such cases to limit the names to three. This comet will therefore be called *Jurlof-Achmarof-Hassel (1939d)*. The comet showed a large round coma with diffuse edges and a bright central nucleus, and there was a conspicuous tail about 20° long. Computations show a nearly parabolic orbit so that its period must be very large, retrograde motion, a perihelion passage on April 10 at a distance from the sun of about one-half an astronomical unit.

Comet 1939e. Kopff. The expected return of this comet was first observed on April 22 by Van Biesbroeck at the Yerkes Observatory. This comet has now been observed at four returns since its first discovery by Kopff in Heidelberg in 1906; it has a period of 6.6 years. When the discovery position was compared with the predicted position in the ephemeris published by F. Kepinski, there was shown such a very small error that Kepinski's ephemeris was the most precise prediction of a periodic comet ever made.

Comet 1939f. Schwassmann-Wachmann 1925 II. This expected comet was first observed photographically at Johannesburg by Jackson on June 12. This is the periodic comet that has shown such

exceptional and rapid changes in brightness ever since it was discovered. Its nearly circular orbit brings it in opposition every year, and it has been well followed since its discovery (although it was unobserved in 1938). This comet has a period of about 16 years and will soon have been followed all the way around its orbit.

Comet 1939g. Brooks II. The expected return of this comet was first observed by Adams and Jeffers at the Lick Observatory on June 17. This comet has been quite regularly observed at its returns since it was first observed in 1889.

Comet 1939h. This new comet (the fourth unexpected comet of 1939) was discovered by Rigollet in France on July 28. It is not definite that this is a new comet, since orbits calculated for it show that it may be identical with Caroline Herschel's Comet 1788 II. Moreover a period of about 150 or 151 years satisfies the observations.

Comet 1939i. Tuttle. The expected return of comet Tuttle was first observed by Jeffers on August 12. This is the seventh observed return of this comet since its discovery by Méchain in 1790. It was not reobserved until it was found independently by Tuttle at the Harvard College Observatory in 1858. Since then it has been followed at each successive return, indicating a period of 13.6 years.

Comet 1939j. Giacobini-Zinner. The expected return of this comet was first seen by Van Biesbroeck at the Yerkes Observatory on October 14. This comet was discovered by Giacobini in France in 1900 and showed a period of 6.5 years. In 1907 conditions were unfavorable and it was unobserved. In 1913 it was independently found by Zinner. Its next return (1920) was again missed, but it was seen in both 1926 and 1933.

Comet 1939k. The expected return of periodic comet Faye was first photographed by Jeffers at the Lick Observatory on November 3. This is the tenth return of this comet to be observed since its discovery by Faye at Paris in 1843. It has a period of about 7.5 years and two of its returns (those of 1903 and 1918) were unobserved.

Comet 1939l. A new comet (the fourth definitely new comet and the fifth unexpected one of the year) was discovered at Escondido, California, by Friend on November 4. The period of this comet has not yet been announced.

In addition to the twelve comets just listed, a comet was announced by Kaminsky at Tashkent (Siberia) on July 24. On August 1 Fresa at Turin, Italy, apparently confirmed this reported comet discovery. However, this comet could not be located by the astronomers at the Yerkes, Lick, and Harvard College observatories. No further information has become available about this questionable object, and so it has been omitted from the above list.

The returns of two other comets were expected in 1939, but were not observed. These were the comets Borrelly and Wolf II. Comet Borrelly was due to pass perihelion at the end of June but was unfavorably situated with respect to the sun. The location of Wolf II is quite uncertain owing to large perturbations by Jupiter, though it was due to come to perihelion in December.

On the night of July 11 a very bright meteor crossed southwestern Ontario and was seen by a large number of people in that region. Several small scattered pieces of meteorite and one large 88 lb. body were recovered near Dresden, Ontario. It is unusual to recover so large a meteorite whose flight has been observed. The

fall of the meteorite was accompanied by noises variously described as resembling fire of guns and thunder. The meteorite is now deposited with the University of Western Ontario at London.

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RICHMOND T. ZOCH.

ATHENIA, SINKING OF. See EUROPEAN WAR under *The War at Sea*; SHIPPING.

ATHLETICS, TRACK AND FIELD. See SPORTS.

ATMOSPHERE. See PHYSICS.

ATOMS. See PHYSICS.

AUSTRALIA. A self-governing dominion of the British Commonwealth of Nations. Capital, Canberra.

Area and Population. The area of the six States and two Territories, the census population of June 30, 1933, and the estimated population on Mar. 31, 1939, exclusive of aborigines, are shown in the accompanying table.

AREA AND POPULATION OF AUSTRALIA

States and Territories	Area in sq. miles	Population	
		June 30, 1933	Mar. 31, 1939
New South Wales.....	309,432	2,600,847	2,742,859
Victoria.....	87,884	1,820,261	1,880,241
Queensland.....	670,500	947,534	1,008,461
South Australia.....	380,070	580,949	595,376
Western Australia.....	975,920	438,852	463,880
Tasmania.....	26,215	227,599	238,061
Northern Territory.....	523,620	4,850	5,737
Australian Capital Territory.....	940	8,947	11,824
Total.....	2,974,581	6,629,839	6,946,439

Living births in 1938 numbered 120,415 (17.46 per 1000); deaths, 66,451 (9.64 per 1000); marriages, 62,411 (9.05 per 1000). A total of 77,928 persons arrived in Australia during 1938 and 68,791 departed, the net immigration being 9137. The aggregate estimated increase in population in 1938 was 63,101. Estimated populations of the chief cities, all of them State capitals, on Dec. 31, 1938, were: Sydney, N.S.W., 1,288,720; Melbourne, Victoria, 1,035,600; Brisbane, Queensland, 325,890; Adelaide, South Australia, 321,410; Perth, Western Australia, 220,330; Hobart, Tasmania, 63,150; Canberra, 9740. Newcastle, N.S.W., had 104,485 inhabitants at the 1933 census.

Education and Religion. Elementary education is free and compulsory. Illiteracy is estimated at about 15 per cent of the adult population. Enrollment in 10,307 State (public) schools in 1936 was 906,221; in 1873 private schools, 234,278. The six State universities, located at the respective State capitals, had 10,657 students in 1936. The division of the population by religious affiliation at the 1933 census was: Church of England, 2,565,118; Roman Catholic, 1,161,455; Presbyterian, 713,229; Methodist, 684,022; Catholic (undefined), 127,542.

Production. The estimated gross value of production, by chief industries, for the fiscal years

ended June 30, is shown in the accompanying table from the *Quarterly Summary of Australian Statistics*.

VALUE OF AUSTRALIAN PRODUCTION, YEARS ENDED
JUNE 30TH [*In thousands of pounds sterling*]

Item	1936	1937	1938
Agricultural	£ 75,388	£ 91,403	£ 93,229
Pastoral	91,286	105,499	100,794
Dairy, poultry, bee-farming...	47,533	49,886	57,641
Forestry and fisheries	11,624	11,765	14,755
Mining	23,248	27,381	32,434
Manufacturing ^a	155,891	170,811	188,061
Total	£404,970	£456,745	£486,914

^a Value added in process of manufacture.

The total area under crops in 1937-38 was 21,951,731 acres. Production of the chief crops in that year was: Wheat, 187,255,673 bu. (about 154,427,090 bu. in 1938-39); oats, 17,165,061 bu.; corn, 6,816,612 bu.; hay, 3,423,753 tons; sugar cane, 5,494,610 tons. Estimated production of cane sugar, 1938, was 810,000 tons. Livestock in 1937 included 113,372,518 sheep (109,379,478 in 1938), 13,078,356 cattle, 1,747,374 horses, and 1,100,082 swine. Wool production (as in the grease) was about 985,000,000 lb. in 1938-39. The value of mineral production in 1938 was £32,420,842 (gold, £14,026,615; silver and lead, £4,744,437; copper, £893,080; tin, £711,628; coal and lignite, £7,539,622). For the year ended June 30, 1938, there were 26,395 manufacturing establishments, with 559,160 employees. Salaries and wages totaled £102,078,550 (exclusive of those of working proprietors), the value of materials used was £287,243,412, and the value added in process of production was £195,488,024.

Foreign Trade. The trend of Australian trade during recent years is shown in the accompanying table. The values are for direct overseas imports and exports, including merchandise, bullion, and specie.

AUSTRALIAN FOREIGN TRADE, YEARS ENDED
JUNE 30TH [*British currency values*]

	Imports	Exports ^a	Balance
1929-30 . . .	£131,081,320	£125,127,148	£- 5,954,172
1931-32 . . .	44,712,868	85,348,607	+40,635,739
1936-37 . . .	92,640,462	129,664,318	+37,023,856
1937-38 . . .	113,975,060	125,837,879	+11,862,819
1938-39 ^b . . .	102,232,092	111,575,703	+ 9,343,611

^a Including re-exports. ^b Preliminary.

In 1938-39 the United Kingdom took 47 per cent of all exports (55 in 1937-38); United States, 14 (7); France, 7; New Zealand, 5; Japan and Belgium, 4 per cent each. Of the imports, the United Kingdom supplied 40 per cent in 1938-39; United States, 14; Canada, 8; Netherlands Indies, 7; Japan and Germany, 4 per cent each. Wool, wheat, butter, lead, gold, and frozen meat are the principal exports. See IMPORTS AND EXPORTS.

Finance. For the fiscal year ended June 30, 1939, receipts of the Consolidated Revenue Fund totaled £95,064,790 (£89,458,154 in 1937-38) and expenditures were £94,437,481 (£85,963,421 in 1937-38), exclusive of expenditures of £3,494,733 in 1938-39 and £1,276,558 in 1937-38 from excess receipts. The Consolidated Revenue Fund receipts and expenditures for 1939-40 were estimated at £101,490,000 and £101,452,000, respectively. In addition expenditures out of loans for defense, etc., amounted to £3,912,000 in 1938-39 and were estimated at £48,931,000 for 1939-40. For defense budgets, see *History*.

The Commonwealth public debt on June 30, 1939, was £397,250,931 and the aggregate debt of the States £897,772,042, making a total of £1,295,022,973, or a per capita debt of £184 2s. 8d. Figures are in Australian pounds (Australian £ averaged \$3.8955 for 1938 and \$3.5338 for 1939).

Transportation. There were 27,186 miles of government railways and 787 miles of privately-owned lines open for traffic on June 30, 1938. Gross earnings of all government lines in 1937-38 were £45,274,000 and working expenses £34,242,000. Highways in 1939 aggregated 485,000 miles (see *ROADS AND STREETS*). The aggregate route mileage of civil airlines on Jan. 1, 1939, was 30,245 and the miles flown per year was 10,604,568. For the year ended June 30, 1938, civil airlines carried 132,917 paying passengers. The number of vessels entering Australian ports directly from overseas was 1905 of 7,128,404 net tons in 1937-38.

Government. Executive power is vested in the King, who acts through a governor-general and a ministry responsible to the Federal Parliament. There is a Senate of 36 members (6 from each State), elected for 6 years and renewed by half every 3 years, and a House of Representatives of 74 members apportioned among the States on a population basis and elected for 3 years. The composition of the House of Representatives following the election of Oct. 23, 1937, was: United Australia Party, 29; Labor, 29; United Country Party, 16. In the Senate the standing was: United Australia Party, 20; Labor, 16. Prime Minister at the beginning of 1939, Joseph Aloysius Lyons (United Australia Party), heading a United Australia-Country Party coalition government formed Nov. 9, 1934, and reorganized Nov. 29, 1937 and Nov. 7, 1938. Governor-General, Brig. Gen. Alexander Hore Arkwright, Baron Gowrie, who assumed office Jan. 22, 1936.

HISTORY

Political Developments. The year 1939 was a momentous one in Australian history. It was marked by the sudden death of Prime Minister Joseph A. Lyons (q.v.), followed by a period of political realignments, and by the unhesitating entrance of the Commonwealth into the European War in support of the mother country.

Even before Mr. Lyons' death, the stability of his government had been threatened by two factors—the growing electoral strength of the opposition Labor party and mounting friction within the coalition cabinet. There had been serious differences between the United Australia party and the Country party as well as dissensions within the former group. These dissensions arose in part over the growing pressure for strengthening Australian national defenses. After the Czecho-Slovak crisis of September, 1938, some members of the government advocated curtailment of expenditures for social insurance to permit heavier expenditures for defense. (See 1938 YEAR BOOK, p. 68, for the defense and social security legislation passed during that year.) When the cabinet finally decided to abandon the contributory pensions provision of the Social Security Law, R. G. Menzies, in protest, resigned as Attorney General, Minister of Industry, and deputy leader of the United Australia party (March 15).

Menzies' withdrawal was a severe blow to the government. Prime Minister Lyons asked William M. Hughes, Minister of External Affairs, to take over the vacated posts pending a reconstruction

of the government. But before this could be carried out, Mr. Lyons died unexpectedly on April 7. The same day a new United Australia-Country party government under Sir Earle Page, leader of the Country party, was sworn in to carry on until a new leader of the larger United Australia party was chosen. The United Australia party was split into two factions favoring Menzies and former Prime Minister Stanley M. Bruce, then Australian High Commissioner to London, respectively.

Mr. Bruce's conditions proved unacceptable and the United Australia party on April 18 elected Menzies as its leader. The Country party, opposed to Menzies' stand on social insurance, refused to join a government under his leadership. Moreover on April 20 Sir Earle Page, before resigning as Prime Minister, made a bitter personal attack upon Menzies that caused a hostile reaction against Page both within and without the Country party ranks.

Menzies received assurances of support from some Country party members, but his cabinet, sworn in on April 26, was composed entirely of United Australia party members. Besides himself as Prime Minister and Treasurer, it included: Attorney General and Minister of Industry, W. M. Hughes; Supply and Development, R. G. Casey; Defense, Brig. Gen. G. A. Street; External Affairs, Sir Henry Gullett; Commerce, Senator G. McLeay; Interior and Public Works, Senator H. S. Foll; Postmaster-General and Repatriation, E. J. Harrison; Trade and Customs, J. N. Lawson; Health and Social Services, Sir Frederick Stewart; Vice-President of the Executive Council, Civil Aviation and Assistant Minister of Defense, J. V. Fairbairn; Ministers without Portfolio, J. A. Perkins, P. C. Spender, H. E. Holt, Senator P. A. McBride, Senator H. B. Collett. Six of the ministers were members of the last Lyons Cabinet.

Menzies' Program. In outlining the program of his government on April 26, Prime Minister Menzies declared that the economic, financial and military organization of the Commonwealth's defense forces was its primary consideration. If Britain went to war Australia would join her, but no Australian would be compelled to serve on foreign battlefields. While acting as an integral part of the British Empire, Australia must regard itself as a principal power in the Pacific and maintain its own diplomatic contacts with the Pacific countries. In line with this plan, arrangements were completed late in December for the appointment of Richard Gardiner Casey as Minister to Washington early in 1940. No move to establish the proposed legation in Tokyo was reported up to the end of 1939.

The Menzies Government during May and June proceeded with the £63,000,000 defense program laid down under Prime Minister Lyons. In addition Menzies obtained legislation for setting up a Department of Supply and for a register of Australian manpower. However his effort to proceed with the social insurance scheme met with sharp defeat in June and other government initiatives met parliamentary rebuffs. These rebuffs weakened the government, which controlled only 29 of the 74 seats in the House of Representatives. Only the fact that all of the three parties were anxious to avoid a general election in the face of the increasingly critical European situation prevented the government's overthrow.

War Cabinet Formed. The outbreak of the European War stabilized the governmental situation. The same day Britain declared war on Germany (September 3) Prime Minister Menzies announced Australia's entrance into the conflict. A few days later he invited the other parties to join the United Australia party in forming a national government for the duration of the war. The offer was declined by the Labor party but was accepted conditionally by the Country party on September 13 after Sir Earle Page had resigned the party leadership to facilitate such action. He was succeeded by A. G. Cameron, former Postmaster General.

The Country party failed to reach an agreement with the Prime Minister on the bases of a new coalition, but agreed to support all measures for the defense of the Empire. Accordingly the government continued unchanged except for appointment of Ministers Street, Casey, Hughes, McLeay and Gullett as members of the Prime Minister's war cabinet on September 15. On November 12 a slight reorganization took place. The Prime Minister assumed the additional portfolio of Defense Co-ordination and divided the former Defense Ministry into three Ministries—Army (Brigadier General Street), Air (J. V. Fairbairn), and Navy (Sir Frederick Stewart). Minister of Interior Foll entered the war cabinet and Assistant Treasurer P. C. Spender replaced Menzies as Treasurer.

Military Contribution. Australia entered the European War with an enlarged rearmament and defense program well under way and with an industrial plant and financial resources that were very much larger than in 1914. On the other hand the abandonment of compulsory military training in 1929 left the Commonwealth without the nucleus of trained soldiers available upon the outbreak of the first World War. The voluntary militia, numbering about 35,000 in 1938, had been increased to 78,000 by the beginning of August, 1939. In March the Lyons Cabinet decided to establish a permanent mobile military force of 7500 men, but this plan was abandoned by the Menzies Government in August in favor of a well-trained militia. Despite the initial opposition of the Labor party and other elements, compulsory national registration of men between 15 and 64 years of age was completed by the end of August. On October 20 the Prime Minister announced that compulsory military training would be reintroduced in January, 1940. After three months in camp, conscripts would serve in the militia reserve. The militia force under arms would be maintained at 75,000 men, Mr. Menzies said. It was to be equipped with mechanized artillery and modern armored-car and light tank units.

In addition, enlistments were opened in mid-September for a special force of 20,000 men for service at home or overseas as required. Known as the Sixth Division, this force was placed under the command of Maj. Gen. Sir Thomas A. Blamey. Against the opposition of the Labor party and with a number of government members absent, the House of Representatives on November 29 voted (33 to 28) to send this division to serve with the British forces in France early in 1940. John Curtin, Labor party leader, insisted that Australia's manpower was needed for the defense of the Commonwealth in case Japan entered the war on Germany's side.

The Royal Australian Navy at the beginning of 1939 comprised 5 cruisers, 5 over-age destroyers,

2 modern sloops, a survey ship, and a local defense vessel. Before the outbreak of war 2 additional cruisers, purchased from Great Britain, were added to the fleet and 1 old cruiser was modernized. Under construction in Australia and Britain were 2 sloops, 12 motor torpedo-boats, and 3 local defense vessels. By October the naval personnel had increased from 5000 to 10,000 men. The development of Darwin as a naval, military and air base and of Port Moresby in Papua as a base for cruisers and smaller craft was speeded up. Heavy coast defense works were installed at Sydney, Fremantle and Newcastle, and anti-aircraft guns were placed for the protection of the principal cities and exposed towns.

In May, 1939, the Air Force consisted of 132 first-line planes, exclusive of reserves; a permanent personnel of 3170; and a citizen air force of 245. This force was rapidly expanded to 212 first-line planes through construction in Australia and purchases in the United States and Great Britain. The program, mapped out by a British Air Mission that visited Australia early in 1939, called for the training of 900 new pilots annually. But the joint empire air training agreement reached by Australia, Canada, Great Britain, and New Zealand in Ottawa on December 15 greatly expanded the Australian air program. The Commonwealth was to provide 10,400 pilots and 15,600 observers, wireless operators, and gunners. All were to be completely trained in Australia except a few thousand scheduled to receive advance service training in Canada. The cost of this air program in Australia was estimated at £50,000,000 (Australian) for three years. The first Australian detachment to reach England was a squadron of the Air Force which landed on December 26. Shortly before (on December 20) Air Vice Marshal Stanley J. Goble, chief of the Australian air staff, resigned as "a matter of high personal principle." It was reported that he desired the Australian Air Force units in England and France to retain their separate identity rather than be merged with the Royal Air Force.

In contrast with its World War situation, Australia in 1939 was rapidly equipping itself to supply its military, naval, and air forces with the bulk of their equipment, munitions, and supplies. Under the three-year rearmament program announced in December, 1938, government munitions and arms factories were employing 5892 workers in August. Total national defense costs rose from a low point of £3,200,000 in 1931-32 to £26,000,000 for 1938-39. Previous to the outbreak of war defense expenditures for 1939-40 were estimated at £33,137,000 but a revised budget announced December 2 placed the total at £62,140,000. Defense expenditures for the first year of the World War were £19,600,000.

War Aims. In a statement of Australian war aims on October 17 Prime Minister Menzies indicated that the Commonwealth was fighting primarily because it felt its security bound up with that of the British Empire. Australia would have to mortgage herself for a century if she undertook to cut loose from the Empire and organize her own defenses, he said. He listed the protection of small nations as another objective. Australia was not seeking territorial gains and wanted the Germans to have "the same rights and freedom as ourselves." He expressed the hope that Europe would reconstruct itself after the war on the basis of "true justice and independence," and declared that there "must be some international

outlawry of war to which every world power will subscribe."

Co-operation with Great Britain and the other Dominions in the prosecution of these aims was obtained by sending R. G. Casey, Minister of Supply and Development, to London. Sworn in early in November as a member of the Privy Council, he joined with British officials and other Dominion representatives in co-ordinating the Empire's war efforts.

Economic War Measures. Before the war began the government on August 28 assumed control over overseas exchange transactions and prohibited the export of gold or notes. The National Security Act passed early in September gave the government wide emergency powers in virtually all matters involving the effective prosecution of the war. Under this act the government fixed prices of rents and other necessities, acquired control of the 1939-40 wheat crop, prohibited the export of capital, mobilized all overseas assets of the Commonwealth, and in various other ways extended its control over the economic and financial system. Employers were required to reinstate employees in jobs relinquished for war services when these services were ended.

In accords reached with the Australian Government, Great Britain undertook to purchase Australia's entire wool clip during the war as well as its surplus supplies of butter, cheese, meat, eggs, canned and dried fruits, etc. A government board assumed control over shipping. Wheat was marketed through a compulsory Federal pool. Taxes were boosted to absorb part of the increased cost of defense preparations. Exports and most imports were placed under a licensing system.

Other Events. The appointment of the Duke of Kent to succeed Lord Gowrie as Governor-General of Australia upon the expiration of the latter's term in November, 1939, was withdrawn immediately after the outbreak of war in order that the Duke might assume a naval appointment. Lord Gowrie accordingly continued in office.

After drought and extremely hot weather, the States of Victoria, New South Wales, and South Australia were ravaged by disastrous bush fires during January and February. In Victoria, which was the hardest hit, 67 persons were reported burned to death. Claims for private property destroyed in that State aggregated over £778,000, and 4,000,000 acres of State forests with £8,000,000 worth of millable timber were burned.

On August 15 the Federal Arbitration Court laid down the new principle that 44 hours per week should be the standard working time for Australian industry, instead of 48 hours, as formerly. Acceptance of this rule, however, was held to be up to the employers.

See CANADA and GREAT BRITAIN under *History*; EXPLORATION.

AUSTRALIAN ANTARCTIC TERRITORY. That part of the Antarctic comprising all the islands and territory (with the exception of Adélie Land) south of 60° S. latitude and between 160° E. and 45° E. longitude, placed under the authority of the Commonwealth of Australia by an Imperial Order in Council (Feb. 7, 1933) which came into force by the passing of the Act. No. 8 of 1933 (Commonwealth of Australia).

AUSTRALIAN CAPITAL TERRITORY. The inland area (912 sq. mi.) in southeastern New South Wales (acquired from New South Wales by the Australian government on Jan. 1, 1911)

containing the seat of the Federal government, Canberra (8400 inhabitants in 1937). An additional area (28 sq. mi.) along the coast at Jervis Bay was likewise acquired on Sept. 4, 1915. Total area, 940 square miles; total population (June 30, 1938 census), 11,562. Livestock (1937): 244,378 sheep, 9856 cattle, and 1121 horses. For the fiscal year ended June 30, 1937, revenue amounted to £A864,736 and expenditure to £A1,579,147 (£A averaged \$3.9594 for 1936; \$3.9394 for 1937). Administration is under the control of the Australian Minister for the Interior but certain services are still undertaken by the Department of Health and the Attorney-General's Department. See AUSTRALIA.

AUSTRIA. A former independent state of central Europe, annexed by Germany on Mar. 13, 1938, and transformed into an administrative division of the Third Reich. Capital, Vienna.

Area and Population. Area, 32,369 square miles; population, 6,760,000 (estimated June 30, 1938). The 1934 census populations of the chief cities were: Vienna, 1,874,481; Graz, 152,841; Linz (including Kleinmünchen), 108,970; Innsbruck, 61,005. Living births in 1938 numbered 93,968 (13.9 per 1000); deaths, 94,431 (14); marriages, 85,837 (12.7 per 1000) against 46,359 (6.9 per 1000) in 1937.

Education and Religion. About 1 per cent of the adult population is illiterate. At the 1934 census, 90.57 per cent of the inhabitants were Roman Catholics, 4.38 per cent Protestants, 2.83 per cent (191,481) Jews. Of these Jews, more than 100,000 emigrated from Austria between Mar. 13, 1938, and May 15, 1939. There were reported to have been about 120,000 additional non-professing Jews in Austria at the time of Austro-German union.

Production. Agriculture, manufacturing, mining, and lumbering are the main occupations. Production in 1938 was (metric tons unless otherwise stated): Wheat, 441,100; barley, 302,300; rye, 593,700; oats, 439,100; corn, 200,200; potatoes, 3,260,000; beet sugar, 140,400 (1937-38); beer, 3,372,000 hectoliters (hectoliter equals 26.42 U.S. gal.); rayon (1937), 1000; wood pulp, 383,000; paper and paper boards, 282,000. Output of the chief minerals in 1937 was (in metric tons): Cement, 429,000; crude petroleum and shale oil, 63,000 (1938); lignite, 3,242,000; coal, 230,000; salt, 171,000; manganese ore (metal content), 41,800; iron ore (metal content), 672,000; pig iron and ferro-alloys, 388,000; steel, 657,000; lead (smelter), 10,800. A wide variety of manufactured articles are produced. The tourist trade, formerly an important source of revenue, was confined almost exclusively to Germans in 1939.

Foreign Trade. Excluding trade between Germany and Austria, imports in 1938 were valued at 143,500,000 old U.S. gold dollars; exports, \$86,300,000. Including trade with Germany, imports in 1937 were \$161,100,000; exports, \$134,800,000.

Transportation. There were in 1939 about 3685 miles of railway line and 42,120 miles of automobile roads. Austrian Airlines in 1938 carried 18,000 passengers and reported a total haulage of 434,227 ton-miles.

Government. For Constitution and government before Austro-German union, see 1938 YEAR BOOK, p. 70. After the annexation Chancellor Hitler appointed a German, Josef Buerckel, as Reich Commissioner for Austria, and Dr. Arthur Seyss-Inquart, former Minister of Interior of independent Austria, as Governor of the province.

HISTORY

Progress in Nazification. Immediately after the annexation of Austria in 1938 the full force of Nazi propaganda and of German organizing ability had been directed toward co-ordinating the economic system and the political and social institutions of Austria with those of Germany (see 1938 YEAR BOOK, p. 72-73). But reports of correspondents who visited Austria in 1939 indicated that progress toward Nazification was unexpectedly slow. Vienna and the other Austrian cities appeared singularly unmoved by the nationalistic ritual that proved so potent an appeal in Germany proper.

Despite special concessions made to the Austrians with regard to food and the numerous regulations enforced in the Reich, there was growing discontent and criticism of Nazi methods and results. Efforts to organize Austrian economic activities along German lines aroused the passive resistance and non-co-operation of Austrian Nazis and non-Nazis alike. Among the Austrian workers the introduction of German efficiency methods, the speed-up and overtime, provoked malingering and attempted strikes that were quickly repressed. Many Austrian Nazis who had aided in the overthrow of the Schuschnigg regime were embittered by the virtual monopolization of the better state posts by imported Germans.

Reporting on the accomplishments of the first year of Nazi rule, Reich Commissioner Buerckel stated in March, 1939, that work had been provided for 650,000 unemployed Austrians, chiefly in munitions factories and on public works. Nine thousand workers' homes had been erected, and the mining and lumbering trades greatly expanded to supply the ever-increasing demands of Germany proper. Observers reported that while grumbling was widespread among all Austrian classes, it was greatest among the pre-*Anschluss* Nazis and Pan Germans, the business men and employers generally, and the intellectuals. The lower classes of society complained least and considered themselves benefited, on the whole, by the Nazi regime.

To speed up Nazification measures, Reich Commissioner Buerckel on May 1 added to his duties those of Governor of Austria and Burgomaster of Vienna. This brought all of Austria under more centralized control from Berlin. Meanwhile the Nazi drive against adherents of the former Schuschnigg regime, Monarchists, Social Democrats, Jews, Catholics, and other opposition elements was pushed vigorously. On government orders, caskets containing the bodies of former Premier Seipel and the murdered Chancellor Dollfuss were secretly removed in January from the Seipel-Dollfuss Memorial Church in Vienna to common cemeteries. All Hapsburg properties in Austria were confiscated by the state on March 14. There were repeated arrests and trials of Monarchist sympathizers charged with conspiring against the state; of former officials of the Schuschnigg regime accused of fraud or other crimes; and of Catholic clergy and Social Democratic leaders. On August 9 the *Official Gazette* in Vienna announced the dissolution of hundreds of non-Nazi associations and the confiscation of their properties. It was reported in May that the Jews, suffering greater disabilities in Austria than elsewhere in Germany, were leaving at the rate of 200 a day. After the German conquest of Poland (q.v.), thousands of Austrian Jews were transferred to a Polish reservation. See JEWS; also REFUGEES.

Campaign Against the Church. The Nazi regime also continued its relentless drive against the Roman Catholic Church and other anti-Nazi religious groups. The enormous property holdings of the Catholic Church were gradually transferred to the state by a piecemeal process that avoided the aspect of outright and wholesale confiscation. Many religious schools, convents and monasteries were closed and the buildings taken over for barracks and other military purposes. Large business properties owned by the Church in Vienna were turned over to Nazi officials for administration. By the end of 1939 the bulk of the Church properties throughout Austria were reported to have been secularized.

At the same time steps were taken to subordinate the clergy to the state's authority. A decree of May 10 deprived the Supreme Council of the Protestant Churches of Austria of its official status. On May 12 Catholic authorities were ordered to submit all future changes in personnel of the clergy to the Nazi party for approval. Another decree of the same date placed cremation on the same legal basis as burial. Archbishop Sigismund Waitz of Salzburg, the Catholic Primate of Germany, was ousted on May 30 from his state-owned palace, which was taken over by the Hitler Elite Guards. Early in July Nazi demonstrations and riotous attacks upon Theodor Cardinal Innitzer, Archbishop of Vienna, forced him to abandon a tour of rural districts northwest of Vienna. The state subsidy of 120 marks monthly allowed each Catholic priest was ended on September 1. Thereafter members of the Catholic and other faiths were taxed to maintain their churches and clergy. Early in August the Catholic University at Salzburg was suppressed. See **ROMAN CATHOLIC CHURCH**.

Austria's Attitude Toward War. With the outbreak of war against Poland, France, and Britain early in September both anti-Nazi sentiment and Nazi repressive measures were intensified. One observer reported that Austrian troops were "gay and nonchalant" when called to arms. But in Vienna and other cities additional Monarchist and Social Democratic leaders were arrested on charges of "civil disobedience." Meanwhile Austrian exiles abroad undertook to organize a movement for the restoration of Austrian independence. Prince Ernst Ruediger von Starhemberg, former Vice Chancellor and leader of the disbanded anti-Nazi Austrian Heimwehr, a Fascist militia, sought permission in France to organize an Austrian regiment for service against Germany. Archduke Otto of Hapsburg, pretender to the throne of Austria and Hungary, asked the French and British Governments to permit the formation of at least one division of Austrian royalists and other exiles to fight with the Allied armies. In return he wanted Britain and France to list the independence of Austria as one of their war aims. See **GERMANY**.

AUTHORS' LEAGUE OF AMERICA.

A national organization of authors, dramatists, radio writers, and screen writers. It was founded and incorporated in 1912 for the purpose of procuring adequate copyright legislation, both international and domestic; protecting the rights and property of all those who create copyrightable material; advising all such in the disposal of their productions and obtaining for them prompt remuneration therefor; and disseminating information among them as to their just rights and remedies. The League includes the Dramatists'

Guild, the Authors' Guild, the Radio Writers' Guild, and the Screen Writers' Guild. Closely affiliated with it is the Authors' League Fund, an agency formed by the League to meet its obligations with respect to the care of the sick, the aged, and the unfortunate. The officers for 1939-40 are: President, Elmer Davis; vice-president, Kenyon Nicholson; secretary, Homer Croy; treasurer, Luise Sillcox. Headquarters are at 6 East Thirty-ninth Street, New York City.

AUTOMOBILE ASSOCIATION, THE AMERICAN. An association formed at Chicago, in 1902, to serve as the national organization of nine motor clubs. Today, there are approximately 725 motor clubs and branches, with approximately one million members, affiliated with the A.A.A.

The purposes of the organization are twofold: first, through club co-operation, to provide a nationwide network of service and protection to members wherever they travel; and, second, to work constantly for the improvement of conditions surrounding operation of private passenger cars through legislation, education, and other means.

Through the national organization, a member in one club automatically becomes a member of all other clubs and entitled to all services. Among these are included: routing and touring service with a wide range of maps, directories, last-minute road condition reports, and other travel aids; emergency road service under which breakdowns on the road are taken care of by an A.A.A. garage without charge; a bail bond which protects members against a night in jail when charged with traffic violation; and a wide range of other services that are rapidly becoming nationally standardized.

In its public activities, the A.A.A. has concentrated largely on the provision of better highways, fair and equitable taxation of the motor vehicle, a broad-gauged program of traffic safety, the seeking of uniform and well-planned traffic laws, and freedom of travel between the States. It was an early leader in the Good Roads Movement, which resulted in establishment of the principle of Federal-aid for highways, and which has brought about the building of one million miles of surfaced highways. The A.A.A. sponsored the Glidden Tours back at the turn of the century, which did much to prove to the public at large that the automobile afforded a reliable means of transportation.

The A.A.A. maintains a Foreign Travel Division which, up to the time of the outbreak of war in Europe, handled 70 per cent of all cars shipped abroad for foreign vacationing. Through its affiliation with the two international travel organizations, the International Association of Recognized Automobile Clubs and the International Touring Alliance, the A.A.A. can provide its members with motor club service throughout the world.

The A.A.A.'s Contest Board is the internationally-recognized governing body of racing in the United States, and in addition to sanctioning automobile races, it times speed trials such as those on the Bonneville Salt Beds, and makes official tests of automobiles and automobile products.

At its recent meeting in Washington, D. C., the A.A.A. adopted a broad-gauged program of action including: efforts to wipe out abuses in the field of automobile financing; removal of jurisdiction of fee-splitting enforcement officers over the high-

ways through setting up minor court systems; provision of adequate rights-of-way for future highway development through a new land-acquisition program; further efforts to solve the problem created by lack of adequate parking facilities in urban districts; and reduction of pedestrian fatalities. Its basic principles are set forth in the "Bill of Rights for Motorists," adopted in 1937.

The officers for 1939-40 were: President, Thomas P. Henry, Detroit, Mich.; vice-presidents, John H. Wright, Jamestown, N. Y., John R. Bentley, Cleveland, Ohio, John A. Rupp, Allentown, Pa., R. R. Reynolds, Asheville, N. C., Sam W. Burchiel, Providence, R. I., Arthur H. Breed, Oakland, Calif., and Dai H. Lewis, Buffalo, N. Y.; secretary, John L. Young, Cleveland, Ohio; treasurer, Corcoran Thom, Washington, D. C. Headquarters are at Pennsylvania Avenue and 17th Street, Washington, D. C.

AUTOMOBILE RACING. See SPORTS.

AUTOMOBILES. In the manufacture, sale, servicing, and use of motor vehicles 1939 was a very satisfactory year, though few records were broken. Car and truck makers produced more than they anticipated; dealers' stocks of both new and used cars moved comfortably; service business was good, as indicated by increased use of motor transportation reflected in total registrations and gasoline consumption, both reaching new highs; users had available to them the best vehicles yet offered; new legislation was more kindly in its restrictions and control, and driving was much improved, partly by better regulation and largely by greater voluntary attention to safe requirements. Accidents in proportion to miles travelled were the lowest since traffic accident records have been kept.

From the beginning of the motor industry, which was born with the 20th century, vehicle production steadily increased until 1917. From then until the depression, the progression followed a three-year cycle of a drop, a recovery, and an advance. The next drop, 1930 continued for three years and recovery took five years until 1937 (not quite reaching 1929 however) and there was no advance, 1938 marking another drop. If the cycle has been resumed, as the 1939 records seem to indicate, the predicted production of 4,500,000 units in 1940 seems reasonable and likely to be exceeded because the 3,500,000 forecast for 1939 was exceeded by over 200,000.

The war in Europe and any further labor disturbances are factors that will have a bearing. The net of the war's effect last year is rather indeterminate. It undoubtedly increased truck exports, and while passenger-car exports to beligerent countries ceased, they increased to neutral countries; all other car producing countries (except Italy) being at war, were out of the foreign markets. But for strikes at the end of 1939, production would have much further exceeded the predicted three and a half million. The strike in the Chrysler plants made some 50,000 workers idle. (See LABOR CONDITIONS.)

For the fourth consecutive year the National Automobile Show was held in the late fall (two weeks earlier than ever—October 15 to 22) instead of the forepart of the succeeding January. The change in custom was initiated in 1935 in the hope that offering new models before winter had set in would stimulate new car buying and create more factory employment when idleness was most distressing. The experiment was successful in its benefits to labor, but dealers have not been so

well pleased. While they sold more new cars at an earlier season, the used cars that they took in trade had nothing to stimulate their earlier resale, consequently dealer capital was tied up in them until they moved under the normal spring demand. This has proved such a serious handicap to dealers that most are clamoring for a return of show time and new model announcements to January. Thus far manufacturers have resisted this pressure feeling that improved employment stabilization was too important to be sacrificed, hoping perhaps that in time dealers will become adjusted to the new order or that other means may be found for their relief.

Few new models were announced much before the show opened, which contributed to the show's interest and greatly increased attendance. In appearance, as always, new models were changed, but for years it has been increasingly difficult to enhance their good looks. To an even greater extent it appears to be hard to make outstanding mechanical improvements. The most striking innovation in the 1940 models was an industry effort and so found on nearly all makes, the new Sealed-Beam headlights. For two years lamp and car makers had been co-operating in this development to make night driving safer, and motor-vehicle administrators and others active in traffic safety lent their support. It combines in one sealed unit filaments, reflector, and lens. The focus, being fixed, is unalterable by accident or intention, leaving nothing in installing it but proper pointing. This is easily effected by adjusting the lamp's aim with reference to a target set up in specified relation to the car. The cost of the unit has been brought so low that its replacement, when a filament burns out, is not too much more expensive than a new bulb. The reflector being sealed from atmospheric influence and of a non-deteriorating character is never itself the cause of replacement, but a broken or scratched lens may require renewal. The candlepower is higher than former normals and the pattern of beam is projected so as to give the maximum of road and right-shoulder illumination without offensive glare to approaching drivers when the "traffic beam" is in use. The "country beam" throws a better light to a greater distance than former lamps but is intended for use when no vehicles are approaching.

Another improved safety feature common to most new models was use of a new Hi-Test safety glass. It has a new plastic for the lamination between the two sheets of glass which is several times as strong at low temperatures as that formerly used. It may be had with sheet or polished plate glass, the latter being preferred as giving no distortion to objects viewed through it. (See also GLASS.)

Generally speaking, bodies on the new cars were longer, wider, and lower and had greater glass area for better visibility. Much attention was given to improved riding qualities and easier steering. Mechanical gear-shift controls mounted under the steering wheel were practically universal standard equipment. A departure first noted in the 1939 models was very generally applied in the 1940 cars, where heaters are ordered as extra factory equipment—the combination of ventilation with heating, by taking fresh air from outside instead of recirculating air within. A definite trend was in the locating of heaters under the front seat to warm the front and rear compartments more equally.

Also, not new, but more widely adopted were

foam-rubber seat-pads, independent front-wheel springing (Hudson and Nash were the latest to abandon solid front axles), plating or super-finishing engine cylinder or piston surfaces, supplying oil filters as standard equipment, and overdrives as standard or optional. An improved design of overdrive goes into action at a lower speed (20 miles an hour), but is under such control that its engagement can be delayed or direct-drive resumed at any speed.

The fluid-drive, introduced on the 1939 Chrysler Custom Imperial, was added to a few more Chrysler models as optional equipment, but other lines appeared not quite ready to adopt it. Oldsmobile did incorporate a fluid-coupling as an improvement to its four-speed automatic transmission which was continued as optional equipment. Willys adoption of hydraulic brakes leaves almost no standard-sized car not so equipped.

Power plants were improved, but in only one instance completely redesigned. Where power was increased it was not by larger cylinder dimensions but by using higher compression cylinder-heads or improved manifolding or valve design. The only entirely new engine was in the Packard Custom Eight which replaced the Packard Twelve. This leaves the Lincoln and the Zephyr as the last of the 12-cylinder cars. Cadillac still has a 16-cylinder line, but an insignificant number are sold. Apparently most purchasers of even the highest priced cars consider eight cylinders sufficient.

Running boards are disappearing as being non-essential, since floors have been lowered to their level and bodies have been widened. Several makes still provide them optionally.

One new passenger car made its appearance—the Crosley, as another very small and low-priced car in a class with the Bantam, whose manufacture was resumed. No passenger car makers discontinued, but one truck maker, Stewart, ceased production.

Statistics. Figures released by the Automobile Manufacturers Association at the year's end indicated that motor vehicle production during 1939 was 40 per cent above that of the previous year. Final figures were not available, but it was estimated that passenger car sales by the factories in the United States and their Canadian plants would total 2,960,000 of a wholesale value of about \$1,815,485,000, and truck sales 750,000, valued at wholesale at \$486,071,000. Parts, accessories, and tires for replacement—i.e. not sold on new vehicles—and service equipment had a combined wholesale value of \$1,283,540,000 which, added to the vehicle value, made a grand total of factory business of \$3,585,096,000, a dollar volume 29 per cent greater than that for 1938.

Figures on the production of motor vehicles in foreign countries last year will not be available until midyear, but the 1938 figures released by the Department of Commerce last July 1 through *Automotive World News*, afford some percentage comparisons. The world total of all vehicles was 4,000,809. Of these 33.6 per cent were produced outside of the United States and Canada, amounting to 1,345,582, made up of 920,455 passenger cars and 425,127 trucks and buses. American production was more than proportionately off that year, having averaged about 80 per cent of the total during the preceding four years. On account of the war's effect on the largest European producers it is quite certain that foreign production in 1939 did not exceed 30 per cent of the total, on which basis it may be estimated to have

been about a million passenger cars and half a million trucks and buses, bringing the world total to about 5,300,000 vehicles. In 1938 foreign producing countries exported 15.9 per cent (214,164 vehicles) of their production; the United States and Canada 12.6 per cent (334,974 vehicles). The same countries imported 103,271 vehicles as compared with the United States and Canadian importation of 15,344.

While the 472,000 American motor vehicles sold outside of the United States (exports and Canadian production) in 1939 was only 20,000 less than in 1938, its per cent of total production dropped from 18½ to 13 because of the increased domestic business. The total value of motor vehicles, parts, and tires exported from the United States and Canada, however, increased 2 per cent amounting to \$322,000,000.

Registration of motor vehicles started upward again, increasing 4 per cent. At the end of 1939 it had reached 30,710,000 made up of 26,250,000 passenger cars and 4,460,000 trucks. World registration correspondingly increased to 45,000,000; the percentage in the United States remained the same, 68 per cent.

Employment in the automobile, body, and parts factories averaged 389,000 workers and the weekly payroll \$12,226,000. Compared with the corresponding 1938 figures these were 21 and 40 per cent higher, respectively—an interesting comparison with the production increase of 40 per cent.

Taxes also took an upturn. The 6.6 per cent increase of total motor-user taxes was larger than the registration increase of 4 per cent. The new high of \$1,631,000,000 of motor-user taxes, however, was only 11 per cent of all taxes, Federal, State, and local, as it had been in 1938. Gasoline taxes accounted for nearly two-thirds of the total, \$1,035,000,000 being collected by Federal, State, and municipal governments. This also was a greater increase (7 per cent) over the previous year than the percentage increase of vehicles in use.

In the consumption of raw materials for the manufacture and use of motor vehicles as compared with total consumption, the percentages continued to be substantially what they have been for several years to wit: Gasoline 90 per cent, rubber 80, plate glass 69, lead 33, nickel 25, steel 16, copper 13, aluminum 12, tin 11, zinc 10, and lumber and hard wood 2. The gasoline used by motor vehicles was estimated at 20,787,000,000 gallons of a retail value, including taxes, of \$4,050,000,000. The railroads enjoyed an 8 per cent increase in automotive freight, handling 3,460,000 carloads.

The motor-vehicle retail business was likewise good in 1939. While no figures are procurable of the total volume of business the number of establishments gives some implication. The total retail outlets—selling vehicles, repair parts, and accessories—excluding duplications were 94,494. Included in this figure were 86,709 repair shops and 40,599 new car and truck dealers. Wholesalers numbered 6176 and the total of retail gasoline outlets was 400,000.

Motor Transportation. Motor vehicles in use in this country last year yielded an estimated total of 250,000,000,000 miles of motor transportation, allowing an average of 8850 miles per year per passenger car and 10,100 miles per year per truck. There are now approximately two passenger cars to every three families in the United States and about 60 per cent of their use is for business or as a utility. Pleasure or recreational

use of passenger automobiles is not without its commercial significance considering that about five billion dollars was spent by the 50,500,000 people who took touring vacations. Seven million people visited the national parks during 1939, most of them traveling by motor car, as about 90 per cent of all travel in America is by motor. Approximately 367,230 motor vehicles are owned by the Federal, State, and local governments.

At the end of the year there were 4,460,000 motor trucks registered, for which their operators paid taxes of \$421,000,000 made up of registration fees, gasoline taxes, miscellaneous state taxes (including special motor-carrier taxes), Federal excise, and special city and county taxes, an average per vehicle registered of nearly \$95. Truck use gave employment to nearly 3,760,000 drivers. Of the total trucks 960,000 were operated in fleets of eight or more by 25,116 operators. Buses in use were 134,000 and, during the year, about 18,000 new ones were produced. The motor bus industry showed increases in the year, largely from bus replacement of trolley cars in small municipalities and also from travel to and from the San Francisco and New York world's fairs, for it is estimated that 6 per cent of the visitors to the fairs used buses. Three quarters of the visitors to the fairs, according to a survey made, traveled by motor car.

The European situation focused attention on national defense in 1939, and military experts and engineers made surveys of our existing highway facilities and motor equipment to determine the potentialities for moving troops and supplies. This country fortunately already has facilities for military requirements that were created for and very largely financed by the taxes paid by motor vehicle owners which, for three years, have exceeded a billion and a half annually. As indicating the extent to which adequate highways are needed to serve only one of the vital functions of government, rural free delivery of mails extends over routes totaling 1,390,000 miles of public roads, exclusive of city delivery.

Though rail and motor transportation are competitive, they are also co-operative. One out of every seven rail carloads is automotive material. A railroad official recently stated, "64 American railroads operate more than 5200 buses over approximately 50,000 route miles, while 53,000 trucks are operated by railroads in terminal transfers, intercity and store-door delivery service." The far greater part of railroad use of motor transportation is hired service. In the first quarter last year freight carried over the highways in their own vehicles represented 1,320,000 ton-miles, while the railroads shipped in vehicles they did not own 7,662,000 ton-miles. In the same period the railroads carried 439,408 passengers over the highways, of which 155,351 were transported in railroad-owned vehicles. Railroads are the outstanding long-distance haulers, for 80 per cent of trips made by trucks are less than 20 miles, according to sample studies made in 1939 in connection with highway planning surveys. By contrast only 6.4 per cent of all trips recorded were 50 to 500 miles long, but they accounted for 41.2 per cent of total vehicle mileage. Large proportions of livestock, fruit, and vegetables are sent over the highways by direct shipment on long hauls because of their perishable character.

Automobile Accidents. Intensive industry attention has been given to traffic safety during the past four years. In that time funds contributed

by the manufacturers of cars, parts, tires, petroleum refiners, finance companies, and others to various organizations directly or indirectly interested in accident prevention, have totaled \$1,600,000. This cost was significant compared to the estimated saving of 29,000 lives and one billion dollars in property damage, the accident fatality rate having been lowered 37.3 per cent.

With December records incomplete traffic fatalities for 1939 would total an estimated 31,500, a reduction of 2 per cent in spite of a 6 per cent increase in motor vehicle mileage. Probably 1939 will have proved to have been the safest for motorists and pedestrians in the past seven years. November closed a two-year period of steadily declining traffic fatalities. The new record of less than 11 deaths per hundred million vehicle miles strikingly contrasts with the 1935 rate of more than 17. Most of this must be credited to more effective administration of traffic safety functions by state and local public officials. Much is also due to support given by civic and professional groups and awakening of public attentiveness to caution in walking and driving, through the press, the radio, and the distribution of safe-driving literature. More specifically contributing factors were wide-spread application of the Standard Highway Safety Program for States; completion of the Highway Planning Surveys by the Public Roads Administration in collaboration with state highway departments; establishment of official co-ordinating committees in five important states; better cars and equipment; better acceptance by the public of effective enforcement and educational programs and a growing willingness on the part of individuals to co-operate.

Grand prize awards in the National Safety Council's Traffic Safety Contest for 1938 were made last year to New Jersey as the safest state and Providence, Rhode Island, as the safest city. During 1939 New Hampshire showed the largest accident reduction, 24 per cent. Twenty-three states showed improvement. Among cities Kansas City, Mo., had the largest reduction, 55 per cent.

Legislation. Last year 44 state legislatures convened. Over 10,000 bills were introduced that potentially affected highway users, but only 1200 became laws. A summary of the laws relating to motor-fuel taxes shows one increase and no reductions and all emergency taxes were continued, following the usual experience. Only twice has the rule failed that once applied they are continued. Previously levied emergency gasoline taxes due to expire last year were continued in eight states. Bills to reduce the fuel tax were defeated in 10 states and bills to increase it in 12 states. In general Diesel fuel is now taxed on a par with gasoline, if not directly then indirectly, as in Nebraska, by doubled registration fees. New Mexico had charged more for Diesel fuel but lowered it to the gasoline rate, though Nevada raised it to one cent more per gallon than for gasoline.

Registration and license fees were increased in six states, decreased in three, and revised in seven. The experience of those states that heretofore have postponed registration dates to encourage winter use of cars and augment gasoline tax revenue, led seven more states and the District of Columbia to provide extensions, bringing the number now up to 24. Efforts to extend the date failed in seven states, however.

Diversion to other than highway construction, maintenance, and administration of any revenue derived from fuel taxes or registration fees reached

an extent and proportions in recent years that aroused increasing protestation. To remove the temptation from harassed legislators, four states made it constitutionally prohibitory, and last year three more states adopted anti-diversion amendments and five additional ones took the necessary preliminary steps. Actual diversions were defeated in many states. In some other states there were new or increased diversions, so that the gross amount diverted may equal or even exceed that of previous years. In New York diversions reached a new ceiling of about \$73,000,000.

Another recent legislative trend stirred even wider resentment, the passage of such laws as restrict trade between states, some directly affecting motor transportation, others the products carried. During the past year conventions and pronouncements were especially directed against these trade barriers by the Department of Agriculture, the Council of State Governments, governors, writers, and other organizations and prominent individuals, as certain to increase consumer's costs. Port of entry laws were among those so castigated. No new ones were enacted; Oklahoma repealed its law, and New Mexico modified the one on its books. Progress was also made in the extending or reciprocity between states and the liberalizing of non-resident privileges. Eight states enacted new reciprocal laws and in three, attempts to repeal them were defeated. Low limits of size and weight were raised in 10 states, bringing them in line with the Uniform Code recommended by the American Association of State Highway Officials. Practically all new carrier regulation was in the nature of amendments reconciling state legislation with the Federal Motor Carrier Act. Legislation to regulate licensing and taxing of itinerant merchants proposed in 24 states passed in only five. While some control of peddlers is justified, carried to the extent of interfering with competition it is not in the public interest. West Virginia joined Pennsylvania in prohibiting certain practices in transporting automobiles, but by amendment the Pennsylvania law will not become effective until 1942.

Much legislative attention was given to increasing highway safety. Scores of laws passed dealt with drunken drivers. Speed limits were amended or established, but most tended to raise limits too restrictive for daylight driving. With Florida enacting a highway patrol law every state now has some type of patrol. Florida also adopted the uniform drivers' license laws. Again Massachusetts stands alone in requiring compulsory insurance. This time eight states rejected it. Four more states adopted the uniform financial responsibility law sponsored by the American Automobile Association, bringing the total up to 31. Compulsory periodic inspection of motor vehicles for which favorable sentiment had appeared to be growing, had its ups and downs. Arkansas and Nebraska repealed their laws and six states failed to pass such bills, being stopped in two by the governor's veto. West Virginia did adopt it, Maine and Vermont strengthened their existing requirements, and South Carolina extended its inspections to include private automobiles. See ELECTRICAL ILLUMINATION; BUSINESS REVIEW; INTERSTATE COMMERCE COMMISSION; ROADS AND STREETS.

H. R. COBLEIGH.

AVIATION. See AERONAUTICS.

AZERBAIJAN (ä'zär-bi-jän') **SOVIET SOCIALIST REPUBLIC.** One of the 11 constituent republics of the U.S.S.R., adjoining northwest Iran. It includes the Nagorno-Karabakh Autonomous Region (1660 sq. mi.) and the Nakhichevan Autonomous Soviet Socialist Republic (2280 sq. mi.). Total area, 33,200 square miles; total population (Jan. 17, 1939), 3,209,727. Capital, Baku (800,000 inhabitants). The production of petroleum (22,400,000 metric tons in 1938), especially in the Baku region, is the most important industry. New chemical industries for the manufacture of soda, fertilizers, and synthetic rubber were started in connection with oil refining. Ninety per cent of the peasant farms have been collectivized. The chief agricultural products are wheat, rice, cotton, grapes, nuts, olives, and saffron. In the Lenkoran district, tea, tangerines, lemons, tungs, bamboo, and eucalyptus trees are cultivated. Iodine and bromine are extracted from the pit-hole waters near Baku. Magnetic ironstone, alumina, copper, pyrites, and barites are mined. Sturgeon and gray mullet fishing is an important industry along the seacoast of the Kura lowlands. The capacity of the Azerbaijan electric power stations in 1938 was 248,000 kilowatts. A 300,000 kw hydro-electric power station was being constructed near the village of Mingechaur. See UNION OF SOVIET SOCIALIST REPUBLICS.

AZORES, a-zörz'. A group of nine islands (Corvo, Fayal, Flores, Graciosa, Pico, Santa Maria, São Jorje, São Miguel, Terceira), in the Atlantic Ocean, 800 miles west of Portugal of which it is, administratively, a part (3 districts). Area, 922 square miles; population (1930 census), 253,935. Chief towns: Ponta Delgada (capital), 18,022 inhabitants; Angra, 10,642; Horta, 7643. The principal products consist of oranges, pineapples, olives, grapes, and bananas. There were, in 1938, some 600 miles of roads.

BADEN. See GERMANY.

BADMINTON. See SPORTS.

BAHAMAS, ba-hä'maz or ba-hä'maz. A British crown colony in the West Indies, consisting of an archipelago of islands, cays, and rocks, extending from Florida to the island of Haiti. Land area, 437 $\frac{1}{4}$ square miles; population (Jan. 1, 1939), 67,726 compared with (1931 census) 59,828. The chief islands are Abaco, Acklins, Andros, Bimini, Cat Island, Crooked Island, Eleuthera, Exuma, Grand Bahama, Inagua, Long Island, Mayaguana, New Providence, Rum Cay, and San Salvador (or Watlings)—said to be the first land sighted by Columbus when he discovered the New World in 1492. Capital, Nassau (on New Providence). During 1938 there were 2146 births, 1222 deaths, and 546 marriages. Primary and secondary schools had 16,131 pupils enrolled at the end of 1938.

Production and Trade. The chief products in 1938 were sponge, tomatoes (raw), pine timber, salt, cascarilla bark, shell (tortoise and conch), and crawfish. Livestock in the colony (1938): 1304 horses, 1231 horned cattle, 13,178 sheep, 6198 goats, 5980 swine, and 32,092 poultry. In 1938 (exclusive of specie), imports were valued at £1,138,839 (about 34 per cent of this total was expended on food, drink, and tobacco); exports (including re-exports of £64,688), £213,135 of which sponge (927,000 lb.) accounted for £90,054. Ships (steamers, and sailing vessels) entered and cleared the ports in 1938 aggregated 4,307,423 tons. Highways in the same year extended 1060 miles.

Government. For 1938, revenue totaled £411,764; expenditure, £655,460. Public debt (Dec. 31, 1938), £253,000. Executive power is vested in a governor who is assisted by an executive council of 8 members. There is a legislative council of 9 nominated members and a house of assembly of 29 members elected by electors having a small property qualification. Women do not vote. Governor and Commander-in-Chief, Sir Charles Dundas (appointed May 21, 1937).

History. On Sept. 4, 1939, because of the outbreak of war in Europe, the legislature passed emergency laws which placed the Bahamas on a war basis. Censorship was imposed and a food control committee was appointed to regulate prices and food distribution.

BAHREIN ISLANDS. See ARABIA.

BAKER, THOMAS STOCKHAM. An American educator, died in Pittsburgh, Pa., Apr. 7, 1939. Born in Aberdeen, Md., Mar. 28, 1871, he was educated at Johns Hopkins University (A.B., 1891; Ph.D., 1895) and studied at the University of Leipzig in 1892. From 1895 to 1908 he was associated with Johns Hopkins as lecturer and associate in modern German literature, and during part of this period was music critic (1895-1905) of the Baltimore *Sun* and professor of modern languages (1900-08) at The Jacob Tome Institute, Port Deposit, Md. He became director of the Institute in 1909 and remained there until 1919 when he became secretary to The Carnegie Institute of Technology. Elected president in 1922, he served as such until 1935 when he retired as emeritus and trustee.

Dr. Baker delivered a series of lectures on America under the auspices of The Carnegie Foundation for International Peace in Paris in 1928 and also lectured on "The Significance of the United States for Europe in the Twentieth Century" at various German universities in 1933 under the auspices of the Carl Schurz Memorial Foundation. He organized the first, second, and third international conferences on bituminous coal held at Carnegie Institute 1926, 1928, and 1931, and was recognized as one of the world's foremost authorities on the science of coal.

A frequent contributor to magazines and newspapers, he was the author of *Lenau and Young Germany*, and editor of Hauptmann's *The Sunken Bell* (1898).

BAKER, HOWLAND, AND JARVIS ISLANDS. Three small islands claimed by the United States which fringe the equator in mid-Pacific, situated approximately 1000 miles south and southwest of the Hawaiian Islands. Baker Island is at longitude 176° 31' W., Howland at approximately longitude 177° W., and Jarvis at longitude 160° W. They lie athwart the principal steamship lanes and the Pan American Airways route from Honolulu to New Zealand and Australia. These previously uninhabited islands were occupied as aerologic stations during 1936 by the U.S. Department of the Interior (see 1936 *YEAR BOOK*). An airfield was leveled off at Howland Island in 1937.

BALEARIC ISLANDS. A group of islands of great strategic importance, situated in the Mediterranean off the east coast of Spain, forming a province of that country. Area, 1935 square miles; population, estimated Dec. 31, 1934, at 376,735. Capital, Palma (population, 93,014), on Majorca, the largest island of the group. Minorca and Iviza are the other chief islands. When the Spanish civil war broke out in July, 1936, Majorca and Iviza

were captured by the Insurgents while Minorca was held by the Loyalist Government. For developments in 1939, see SPAIN under *History*.

BALI. See NETHERLANDS INDIES.

BALKAN ENTENTE. A bloc of Balkan states—Greece, Rumania, Turkey, and Yugoslavia—which by the treaty of Feb. 9, 1934, mutually guaranteed their frontiers against aggression by any of the Balkan countries. The treaty bound the four governments to undertake no political action and assume no political obligation toward any Balkan country not a signatory of the pact without the consent of the other contracting parties. In general they agreed to adopt a unified foreign policy on inter-Balkan issues, and to strengthen their economic collaboration. The entente represented an effort to stabilize the territorial status quo in the Balkans and at the same time to free the Balkan states of their traditional diplomatic dependence upon the great powers. On July 31, 1938, Premier Metaxas of Greece, as President of the Balkan Entente, concluded an agreement with Premier Kiosseivanov of Bulgaria authorizing Bulgaria to restore conscription and rearm in disregard of provisions of the Treaty of Neuilly. In return the Bulgarian Government pledged itself to seek revision of its boundaries only by peaceful means.

Events of 1939, and particularly the outbreak of war in September, placed great strain upon the Balkan Entente. The annexation of Bohemia and Moravia by Germany, the Nazi military occupation of Slovakia, and the Italian conquest of Albania placed all the Balkan Entente powers in more exposed and dangerous positions with respect to the Reich and Italy. At the same time the agitations in Bulgaria and Hungary for the restoration of territories lost to Rumania, Greece, and Yugoslavia received encouragement.

The Turkish alliances with Great Britain and France and the action of the Anglo-French bloc in guaranteeing the independence of Rumania, Greece, and Turkey likewise tended to weaken the solidarity of the Entente and to draw the members into the combinations of the great powers. Their increasing dependence upon German trade exposed them to powerful economic and political pressure from Berlin.

The German-Soviet non-aggression pact of Aug. 24, 1939, marking the failure of Anglo-French efforts to bring the Soviet Union into their "peace front," and Italy's non-intervention in the war between Germany and the Anglo-French-Polish bloc led all of the Balkan states to follow the Italian policy of non-participation, although only Rumania and Yugoslavia formally declared their neutrality. At the same time the Balkan Entente renewed its efforts to reach a settlement of Bulgarian territorial claims and minority questions in dispute with Rumania, Greece, and Yugoslavia, as a preliminary to Bulgaria's adhesion to the Pact. Italy also lent her support to the creation of a neutral bloc, comprising the Balkan states and Hungary, that it was hoped might prevent the spread of the war into southeastern Europe.

The fifth annual conference of the Foreign Ministers of the Balkan Entente powers met in Bucharest Feb. 20-21, 1939. While reaffirming their opposition to territorial revision, they voted to open trade discussions with Bulgaria. The economic conference of the Balkan Entente, held in Bucharest in May, discussed the payment of commercial debts to Rumania owing by the other

member states and the regulation of railway and postal traffic.

See ALBANIA, BULGARIA, FRANCE, GERMANY, GREAT BRITAIN, GREECE, HUNGARY, ITALY, ROMANIA, TURKEY and YUGOSLAVIA under *History*.

BALKAN STATES. The states of the peninsula south of the Danube, and bounded by the Adriatic, Aegean, and Black Seas. See ALBANIA, BULGARIA, GREECE, ROMANIA, TURKEY, and YUGOSLAVIA.

BALTIC ENTENTE. A bloc comprising the three Baltic States—Estonia, Latvia, and Lithuania—for the mutual protection of their independence and promotion of joint economic, political, and cultural interests. By a treaty signed Sept. 12, 1934, the three governments agreed to co-operate on all joint questions of foreign policy, to confer together at least twice annually, to settle their mutual disputes peaceably, and to establish closer unity and collaboration among their diplomatic representatives abroad and at international conferences. All three states had previously concluded non-aggression pacts with the Soviet Union. In the spring of 1939 they signed similar treaties with Germany. For other developments in 1939, see ESTONIA, LATVIA, and LITHUANIA under *History*.

BANGKA. See NETHERLANDS INDIES.

BANG'S DISEASE ERADICATION. See VETERINARY MEDICINE.

BANKERS ASSOCIATION, THE AMERICAN. The principal national organization of banks in the United States and the largest in the world, having a membership of nearly 14,000 banks, or 95 per cent of all banking assets in the country. Its four major divisions are devoted to the special interests, technical advancement and general welfare of the following classes of banks: National, state, savings, and trust companies. The Association also maintains the American Institute of Banking, educational section of the Association, and The Graduate School of Banking. The former has a membership of 65,000 bank employees in every principal city throughout the country. The latter is operated at Rutgers University for advanced education of bank officers. The Association also maintains a state secretaries section which forms a link between the national organization and the 48 state bankers' associations.

The Association's governing body is its annual convention, held in 1939 at Seattle, Washington. The program provided a series of technical discussions to develop the latest information on bank operation. It brought together a group of leaders from the fields of business and research who presented broad surveys of the American business outlook, the future course of banking, research developments, and current trends in American political and governmental institutions.

The national officers elected for 1939-40 were: President, Robert M. Hanes, president of the Wachovia Bank and Trust Company, Winston-Salem, North Carolina; first vice-president, P. D. Houston, chairman of the board, American National Bank, Nashville, Tenn.; second vice-president, Henry W. Koenke, president, The Security Bank of Ponca City, Oklahoma; treasurer, B. Murray Peyton, president, The Minnesota National Bank, Duluth, Minn.; executive manager, Dr. Harold Stonier, New York, N. Y.; secretary, Richard W. Hill, New York, N. Y. The national headquarters are at 22 East 40th St., New York City. A branch office is maintained in Washington, D. C.

BANKRUPTCY. See BUSINESS REVIEW; LAW. **BANKS AND BANKING.** Bank deposits expanded to reach the largest volume on record during 1939. The chief reason for this was the unprecedentedly heavy inflow of gold from abroad. Such gold imports aggregated \$3,574,414,000 during the year. As the Treasury paid for this gold, the sellers received additional deposits in domestic banks which constantly swelled the total. Contributing factors to the increase in bank deposits were additional purchases of government bonds and a moderate increase in commercial loans by the banks of the country.

The credit authorities pursued a passive policy during the year, permitting the unprecedentedly heavy influx of gold to expand excess reserves without seeking to sterilize the yellow metal imported from abroad or to raise legal reserve requirements. However, new legislation to permit the Board of Governors of the Federal Reserve System to increase legal reserve requirements of member banks above the limits now specified by law was given careful consideration, in order to provide the authorities with the power to check inflationary boom conditions should such conditions make restrictive measures desirable in the future.

In one respect, however, a new development in credit policy became apparent. When the European war began, a severe reaction occurred in the government bond market because a number of banks feared that interest rates would rise and bond quotations would fall, just as happened during the World War. Long term Treasury obligations declined by as much as nine points during the first half of September. The Federal Reserve Banks embarked upon vigorous open market buying operations to support the government bond market, adding \$400,000,000 to their holdings of United States government securities during the three weeks ended September 20. Thereafter, when the market for Treasury obligations rallied briskly, as it became evident that the war in Europe did not reduce in any way the huge surplus of funds seeking investment in this country, the Federal Reserve Banks disposed of small amounts of Treasury securities. At the same time, spokesmen for the system indicated that efforts to maintain an orderly market for Federal securities would be a regular feature of credit control policy henceforward, because of the very large stake that the banks of the country have in a stable market for government bonds, their chief asset. However, it was emphasized that the objective of such Federal Reserve Bank intervention in the government bond market would be to smooth out fluctuations, rather than to stabilize quotations around any particular level. Among bankers, however, the contention was advanced that such intervention in the market, by making quotations palpably artificial for a time, might more likely exaggerate than smooth out fluctuations.

A number of banks reported larger earnings for the year, especially institutions in the metropolitan centers, because of additions that they made to their holdings of longer term government obligations. Many institutions that steadfastly refused to hold substantial amounts of longer term Treasury obligations, fearing that extremely low interest rates would not last and that long term bond prices would decline, found it necessary to modify this policy in order to expand their earnings to a level that would enable them to cover their expenses and to pay moderate dividends on

their stocks. As yields on short term gilt edge investments have declined steadily toward the vanishing point, banks that refuse to buy medium and longer term government bonds, particularly those that do not have any substantial amount of loans, have been confronted with the problem of insufficient earnings. In a growing number of instances, bank managements have decided to hold considerable amounts of longer term bonds, and to build up reserves out of the resulting larger earnings against possible future depreciation of these obligations. Just because many banks have bought longer term obligations reluctantly, however, a number of them tend to liquidate early whenever they think a turn in the trend of interest rates has occurred, as was the case when the European war broke out. This tends to make the market for longer term government bonds more sensitive than would ordinarily be the case.

The principal assets and liabilities of the commercial banks insured by the Federal Deposit Insurance Corporation on June 30, 1939, with comparisons, were as follows:

PRINCIPAL ASSETS AND LIABILITIES OF INSURED COMMERCIAL BANKS
[In thousands of dollars]

	June 30, 1939	Dec. 31, 1938	June 30, 1938	Per cent change from Dec. 31, 1938	Per cent change from June 30, 1938
Reserve with Federal Reserve Banks . . .	10,010,744	8,694,388	8,004,090	+15.1	+25.1
Other balances with banks . . .	6,186,780	5,717,600	5,511,377	+ 8.2	+12.3
U.S. Govt. obligations, direct & fully guaranteed . . .	15,038,215	14,506,807	13,525,194	+ 3.6	+11.2
Other securities . . .	6,954,694	6,943,861	6,753,371	+ .2	+ 2.9
Loans, discounts, and overdrafts (incl. redscounts)	16,040,373	16,024,318	15,725,580	+ .1	+ 2.0
Demand deposits (of individuals, partnerships, and corporations) . . .	24,722,378	23,476,863	21,986,370	+ 5.5	+12.7
Time deposits (of individuals, partnerships, and corporations) . . .	14,298,215	14,012,540	14,028,802	+ 2.0	+ 1.9
Total deposits . . .	52,326,754	49,778,676	47,460,741	+ 5.1	+10.3
Total liabilities and capital account . . .	59,425,859	56,800,254	54,369,262	+ 4.6	+ 9.3

COMMERCIAL BANKS COVERED BY ABOVE REPORT

	June 30, 1939	Dec. 31, 1938	June 30, 1938
National banks, members Federal Reserve System . . .	5,203	5,224	5,242
State banks, members Federal Reserve System . . .	1,127	1,114	1,096
Banks not members Federal Reserve System . . .	7,239	7,321	7,385
Total . . .	13,569	13,659	13,723

The changes during the year in the position of the larger banks of the country, comprising the weekly reporting member banks of the Federal Reserve System, are shown in accompanying table.

Credit Control Policy. The effect of the passive attitude of the credit authorities toward the consequences of the enormous gold imports was apparent in the rapid expansion of excess reserves of the member banks of the Federal Reserve System. These excess reserves rose from \$3,298,000,000 on January 4 to a record peak of \$5,534,000,000 on October 25. Thereafter, a decline occurred as the Federal Reserve Banks reduced their holdings of government securities, following the September market support operations, and as the usual seasonal expansion of currency circulation occurred in the closing weeks of the year. Excess reserves dipped temporarily below \$5,000,000,000 during December, but with gold imports continuing on a large scale it was apparent that the expansion in the surplus balances of member banks would recur immediately after the turn of the year. Along with this expansion in excess reserves

went a constant increase in the total of bank deposits, which rose well above the previous 1929 peak during the year. The deposits, exclusive of interbank deposits, of all member banks of the Federal Reserve System rose to \$39,287,000,000 on October 2, which compared with \$36,211,000,000 at the close of 1938 and \$33,865,000,000 at the close of 1929. Deposits of non-member commercial banks are still well below the 1929 level, because of the sharp reduction that has occurred in the number of such institutions, but the decline in non-member bank deposits since 1929 is now smaller than the increase that has occurred in the deposits of all member banks.

There was growing recognition during the year that the fundamental banking problem of the country was the enormous influx of gold from abroad. Increasing criticism was heard in many quarters of the purchase by the Treasury of all gold offered at \$35 an oz., although all thoughtful students of the subject recognized that any cessation of the gold buying policy would have profound repercussions upon American export

trade, the foreign exchange status of the dollar and the economic situation in the countries that were selling us these large amounts of gold. While individual members of Congress displayed impatience with the constant purchases of gold, in view of the growing skepticism about the ability of this country ever to dispose of this yellow

ASSETS AND LIABILITIES OF WEEKLY REPORTING BANKS IN 101 LEADING CITIES

[In millions of dollars]

	Dec 27, 1939	Change from Dec. 28, 1938
Assets		
Loans and investments, total . . .	\$23,260	+1,611
Loans, total . . .	8,758	+ 328
Commercial, industrial, and agricultural loans . . .	4,400	+ 557
Open market paper . . .	322	- 6
Loans to brokers and dealers in securities . . .	715	- 133
Other loans for purchasing and carrying securities . . .	506	- 54
Real estate loans . . .	1,189	+ 20
Loans to banks . . .	43	- 72
Other loans . . .	1,583	+ 16
U.S. Government deposits . . .	8,748	+ 482
Obligations fully guaranteed by Government . . .	2,414	+ 682
Other securities . . .	3,340	+ 119
Reserve with Federal Reserve banks . . .	9,689	+2,632
Cash in vault . . .	544	+ 55
Balances with domestic banks . . .	3,061	+ 651
Liabilities		
Demand deposits—adjusted . . .	18,720	+2,734
Time deposits . . .	5,274	+ 114
U.S. Government bonds . . .	582	- 55
Inter-bank deposits . . .		
Domestic banks . . .	7,977	+1,916
Foreign banks . . .	736	+ 217
Borrowings . . .		- 1

metal abroad in the future, responsible Administration officials felt that the adverse effects of the huge gold influx and the consequent rise in excess reserves to fantastic levels were potential rather than actual. Because of the decline in the velocity of turnover of bank deposits, the increase in the volume of deposits failed to stimulate business activity or to boost commodity prices. The average velocity of turnover of commercial bank deposits during 1939 was $13\frac{1}{2}$ times a year, which was by far the lowest since these statistics were first compiled in 1920, and compares with 22 times a year in the 1922-26 period. Only when the greatly increased volume of bank deposits will actually be put to use, it is recognized, will the danger of inflation become actual.

Reflecting the growing interest in the surplus gold problem, the Senate authorized a broad investigation of the question by its Banking and Currency Committee. The authorization of this investigation followed Congressional approval, after a fight, of an extension of the power of the President to devalue the dollar to 50 per cent of its old parity for another two years beyond June 30, 1939. While a good deal of preliminary work was done by various Federal agencies in connection with this inquiry, which would inevitably come to grips with the gold question, the outbreak of the European war tended to force the whole problem into the background. Since by far the largest part of the world's monetary gold stock held outside the United States is in the hands of Great Britain, France, and the British Empire nations, and inasmuch as the Allies are not able to borrow here, as was the case during the last war, it was felt that any step that was taken to reduce our purchases of gold would limit the buying power of these nations in the United States, and so hamper them in the war. Hence, active consideration of new banking legislation by the end of the year was limited to a mere authorization of the Board of Governors of the Federal Reserve System to increase legal reserve requirements of member banks beyond the limits contained in the Federal Reserve Act, so as to scale down excess reserves in this way should such action become necessary because of an upturn in the velocity of turnover of bank deposits.

In contrast with what occurred in 1914, the outbreak of the war in Europe had surprisingly little

United States, which reached a monthly peak of \$605,797,000 in April. After the war began, gold shipments declined; but when shipping arrangements could be made, imports again increased, especially after direct shipments from South Africa to the United States had been arranged. Also, considerable amounts of gold previously accumulated here for foreign account and held under earmark were released, to provide additional purchasing power in this country and replenish bank balances here. The decline in the pound sterling and the franc was regarded with equanimity by the monetary authorities, as it was felt that Great Britain and France could not take advantage of the lower quotations of their currencies to increase sharply their exports to competitive foreign markets while the war went on.

Excess reserves of the member banks of the Federal Reserve System rose from month to month during 1939 as follows:

RESERVE POSITION OF MEMBER BANKS
[In millions of dollars]

End of month	Total reserves	Excess reserves
January	9,029	3,484
February	8,925	2,047
March	9,021	3,432
April	9,624	3,926
May	9,997	4,212
June	10,085	4,246
July	10,321	4,402
August	10,659	4,607
September	11,443	5,198
October	11,862	5,490
November	11,688	5,259
December 20	11,378	4,900

Federal Reserve Banks. Apart from the constant increase in their holdings of gold certificates, which the Treasury deposited against newly purchased gold, the only important change in the statement of the Federal Reserve Banks for the year was the increase in government bond holdings in September, designed to neutralize the effect of liquidation by commercial banks and others due to the outbreak of the war, and the subsequent liquidation of some of these additional purchases of government obligations after the bond market had rallied sharply. Changes in the principal assets and liabilities of the 12 Federal Reserve Banks during the year were as follows:

PRINCIPAL ASSETS AND LIABILITIES OF THE 12 FEDERAL RESERVE BANKS
[In millions of dollars]

End of Month	Gold certificates on hand and due from U.S. Treasury	Bills discounted	U.S. Government bonds	Treasury notes	Treasury bills	Federal Reserve notes in actual circulation	Member bank reserve deposits	Treasury deposits
January	11,937	5	841	1,210	523	4,339	9,215	747
February	12,115	4	841	1,215	508	4,353	8,936	1,148
March	12,544	4	911	1,176	477	4,380	9,157	1,229
April	13,095	3	911	1,176	483	4,458	9,900	931
May	13,318	4	911	1,176	477	4,477	10,029	920
June	13,515	5	911	1,176	463	4,511	10,018	944
July	13,869	5	911	1,176	401	4,530	10,507	752
August	14,312	5	912	1,179	335	4,631	10,918	708
September	14,672	6	1,316	1,245	242	4,720	11,655	545
October	14,829	6	1,316	1,245	174	4,773	11,973	286
November	14,966	7	1,283	1,233	35	4,862	11,628	419
December 20	15,135	8	1,263	1,233	—	4,980	11,378	694

effect upon the credit structure, so that those concerned with the formulation and administration of credit control policies largely restricted themselves to the role of observers. The establishment of the German protectorate over Bohemia and Moravia in March accelerated shipments of gold to the

Bank Portfolio Policies. The more important changes that occurred in bank portfolios during the year were the following:

1. The member banks added to their holdings of United States government and government-guaranteed bonds during the year. This contributed

materially to the earnings of a number of banks, especially those that had previously refrained from buying intermediate and longer term obligations, and so realized a very low rate of return on their investments previously. On the other hand, some banks were tempted to sell some of their long term bonds in order to realize profits where they had been purchased some time previously at lower prices.

2. The upturn in business activity during the later part of the year caused a moderate increase in commercial loans. Experience has shown that ordinary loans of banks tend to rise most rapidly when inventories are expanding, and this proved to be the case again in the closing months of 1939.

3. Banks displayed keen interest in the possibility of expanding their earnings through embarking upon types of lending not traditional for commercial banks. A number of institutions sought earnestly through the year to make serial capital loans with maturities up to five and seven years, in order to offset the reduced demand for short term commercial loans typical of recent years. In other instances, banks embarked upon installment lending and the making of personal loans to swell their income. In addition, the trend toward the imposition of additional service charges continued, so that more than a fourth of all bank gross earnings is now derived from fees and charges of various kinds, other than interest on loans and investments.

Changes in loans, investments, and deposits of reporting member banks of the Federal Reserve System, month by month, were as follows, as reported in the *Federal Reserve Bulletin*:

LOANS, INVESTMENTS, AND DEPOSITS OF REPORTING MEMBER BANKS IN 101 LEADING CITIES

(Monthly data are averages of weekly figures. In millions of dollars)

Month	Commercial, industrial, and agricultural loans	Loans to brokers and dealers in securities	Other loans for purchase or carrying of securities	All other loans	U.S. Government obligations		Other securities	Demand deposits adjusted
					Direct	Guaranteed		
January	3,800	852*	547	3,139	8,191	1,728	3,211	16,054
February	3,760	795	533	3,109	8,178	1,891	3,261	16,042
March	3,792	831	529	3,089	8,186	2,027	3,251	16,032
April	3,848	697	537	3,045	8,225	2,033	3,342	16,455
May	3,839	678	539	3,035	8,296	2,033	3,273	16,796
June	3,830	671	541	3,042	8,383	2,119	3,291	17,182
July	3,888	648	532	3,078	8,499	2,158	3,243	17,366
August	3,930	642	521	3,086	8,537	2,265	3,346	17,717
September	4,166	568	511	3,077	8,467	2,226	3,369	18,209
October	4,279	552	505	3,085	8,566	2,232	3,352	18,511
November	4,354	613	501	3,105	8,714	2,338	3,341	18,742
December 20	4,406	852	510	3,164	8,762	2,404	3,367	18,923

Bank Regulation Changes. Following the drastic changes in the basic rules governing bank examinations made in 1938, the regulatory authorities were content to stand aside and watch the effects of the new regulations before doing anything further. However, sentiment for the unification of the nation's banking system continued in evidence, and further centralization of the banking system either within the Federal Reserve System or under the Federal Deposit Insurance Corporation will probably be urged whenever the Senate Banking Committee inquiry gets under way. Furthermore, a number of banks were urging that supervision over Federal savings and loan societies should be shifted from the Federal Home Loan Bank Board to the Comptroller of the Currency, so as to co-ordinate the operation of these institutions with the commercial banking system. Such a change has been strongly resisted by the savings and loan associations.

Efforts to strengthen further the nation's bank-

ing structure continued in a number of directions. In individual instances, such as the Integrity Trust Company of Philadelphia, the F.D.I.C. and the Reconstruction Finance Corporation co-operated to effect a merger with other banks after making large loans on the frozen assets of the institutions. Steps were taken in some States also to lower interest rates paid on savings deposits so as to increase net earnings of banks. Thus, in New Jersey the banking board limited interest payments on savings deposits by all banks in the State to 1 per cent, which was expected to strengthen the net earnings position of savings and commercial banks in that State.

An open conflict developed during the year between the Treasury Department and the Bank of America of California, the nation's largest branch banking enterprise, over the future policy of that institution. The Treasury sought to effect a change in the management of the bank, a writing down of its real estate holdings, and the injection of a large amount of new capital by the Reconstruction Finance Corporation. This program was vigorously opposed as uncalled for by the management of the California bank.

See CONGRESS; EXPORT-IMPORT BANK; FARM CREDIT ADMINISTRATION; FEDERAL HOME LOAN BANK BOARD; INTERNATIONAL BANKING AND FINANCE; MONEY, U.S. STOCK OF.

JULES I. BOGEN.

BAPTISTS. A name first given in 1644 to certain congregations of English Separatists who maintained that immersion is essential to valid baptism. In the United States there are 19 Baptist

denominations, which had a combined membership of 9,836,229 in 1938, according to the *Year Book of American Churches* issued by the Federal Council of Churches of Christ. The larger groups (having membership over 50,000) are, in order of size, the Southern Baptist Convention, the National Baptist Convention, (Negro), the Northern Baptist Convention, the American Baptist Association, the Primitive Baptists, and the Free Will Baptists. Statistics for these denominations appear in the table under RELIGIOUS ORGANIZATIONS.

Southern Baptist Convention. This body of the Baptist denomination was formed in 1845, when Southern Baptists withdrew from the national organization on account of the slavery issue and also for the better administration of the work of the Convention. Since that time it has functioned, not as a new denomination, but as a separate organization for the purpose of directing missionary, educational, and general denominational work in the white Baptist churches of the Southern and Southwestern States. According to the

official *Handbook* for 1939 the Southern Baptist Convention comprised 18 State conventions.

The annual session of the Southern Baptist Convention was held in Oklahoma City, May 17-21, 1939. The various boards and agencies of the convention showed decided gains in receipts for the year. The director of the Work of Promotion in the Executive Committee, Dr. J. E. Dillard, led an "Every Member Canvass" during the week of Nov. 28 to Dec. 4, 1938, with the objective of securing weekly subscriptions totaling \$40,000,000.

The officers elected for 1939-40 were: The Rev. L. R. Scarborough, D.D., LL.D., of Ft. Worth, Tex., president; Dr. Rupert F. Naney, Oklahoma City, Okla., and Mr. Aquila Chamlee, Fort Valley, Ga., vice presidents; the Rev. Hight C. Moore, D.D., Litt.D., of Nashville, Tenn., and Mr. J. Henry Burnett of Macon, Ga., recording secretaries; and the Rev. Austin Crouch, D.D., of Nashville, Tenn., executive secretary, and the Rev. J. E. Dillard, D.D., of Nashville, Tenn., secretary of promotion. Headquarters are at 161 Eighth Avenue, North, Nashville, Tenn.

National Baptist Convention of America (NEGRO). The Convention held its 1939 session at the Second Baptist Church, Los Angeles, California, while the Woman's Auxiliary of this Convention held its session in the New Hope Baptist Church, Los Angeles, California. The dates were Sept. 6-10, 1939. The Convention's Theme was "Witnessing For Christ."

There were representatives from 32 States and three foreign countries, including the Bahama Islands. The Convention went on record as pledging to do greater missionary work, home mission and educational endeavor, and to raise more money for the extension of the gospel on foreign and home fields; it reiterated its age-old principles in the New Testament Church. It listened to fraternal messages from other bodies, especially the able address by the representative of the Southern Baptist Convention (white). The next session was awarded to Louisville, Kentucky, the dates being Sept. 4-8 inclusive, 1940.

The personnel of the officials is Rev. G. L. Prince, D.D., President, 2610 Avenue L, Galveston, Texas; Rev. C. P. Madison, D.D., Secretary, Norfolk, Va., Rev. A. A. Lucas, D.D., Treasurer, Houston, Texas, Rev. G. C. Coleman, D.D., Vice President, Oakland, Cal., Rev. Henry Allen Boyd, Secretary, Sunday School Congress, 523-2nd Avenue North, Nashville, Tenn., Mrs. M. A. B. Fuller, President, Woman's Auxiliary, 1105 Angelina Street, Austin, Texas. The headquarters are at 523-2nd Avenue North, Nashville, Tenn., at the National Baptist Publishing Board's plant.

Northern Baptist Convention. This body of the Baptist denomination, according to the *Annual* of the Northern Baptist Convention, was composed in 1939 of 36 conventions in 33 States, the District of Columbia, and Puerto Rico. The thirty-second annual meeting of the Northern Baptist Convention was held in Los Angeles, Calif., June 20-25, 1939. Its general theme was "Victory Through Discipline." The officers elected for 1939-40 were: President, Prof. Elmer A. Fridell, Berkeley, Calif.; first vice president, Mrs. Bradford Abernethy, Columbia, Mo.; second vice president, Prof. William A. Mueller, Philadelphia, Pa.; corresponding secretary, the Rev. Maurice A. Levy, D.D., Williamsport, Pa.; recording secretary, the Rev. Clarence M. Gallup, D.D., New York, N. Y.; and treasurer, Harold J. Manson,

Brooklyn, N. Y. The leading denominational papers were: *Baptist Observer* (Indianapolis); *Baptist Record* (Pella, Ia.); *Missions* (New York); *Watchman-Examiner* (New York); and "*Minister*" (Chicago).

The foreign mission field of the Northern Baptist Convention included Assam, Burma, South India, Bengal-Orissa, South China, East China, West China, Japan, Belgian Congo, and the Philippine Islands. The work of the Convention covers domestic, city, and foreign missions; higher education, social service, Sunday schools and pensions for clergy. Headquarters of the General Council, the executive body to which is entrusted the work of the Convention between annual meetings, are at 152 Madison Avenue, New York, N. Y.

Baptist World Alliance. An organization formed in London in 1905 for the purpose of bringing together in a world-wide fellowship Baptists of all nations, numbering in 1939 according to the latest Directory of the Baptist World Alliance between twelve and thirteen million members. The great English Non-conformist, Dr. John Clifford, was the first president. Successive international congresses were held in Philadelphia, (1911), Stockholm (1923), Toronto (1928), Berlin (1934), and Atlanta (1939).

The sixth and latest congress, in Atlanta, in July, 1939, was notable for its large attendance, exceeding all records of previous meetings. More than 40,000 persons were present for the annual sermon by the retiring president, Dr. George W. Truett, of Dallas, and some 57,000 persons witnessed the historical pageant which portrayed significant events in Baptist history. Outstanding was the emphasis on freedom of church and state, on individual liberty, and on personal evangelism—all significant and historical Baptist doctrines. Resolutions on race relationships found immediate application in the conduct of the congress itself, which was handled entirely by an interracial committee of white and negro Baptists from Atlanta.

Probably no religious gathering in America has ever been given such wide publicity through press and radio. With delegates from some sixty nations from every continent and from every nation of importance, with the sole exception of Russia, there was naturally intense public interest in the pronouncements regarding social and economic questions, the attitude toward peace and war, and the appeal for freedom of worship for oppressed free church groups in more than one European state.

The new officers elected to serve for a five-year period are: President, Dr. James H. Rushbrooke of London; General Secretary, Dr. Walter O. Lewis of Paris; Vice Presidents, Dr. E. A. Fridell of California, Dr. Hans Luckey of Hamburg, Germany, Dr. T. C. Bau of China, Dr. N. J. Nordstrom of Sweden, Dr. L. R. Scarborough of Texas, Rev. C. J. Tinsley of Australia, and Dr. Lacey K. Williams of Chicago; Honorary Associate Secretaries, Dr. Clifton D. Gray, President of Bates College, Lewiston, Maine, and Dr. Louie D. Newton of Atlanta; Treasurers, Mr. C. T. LeQuesne, K.C., of London, England, and Lieutenant Governor Albert Matthews of Ontario, Canada.

BAR ASSOCIATION, AMERICAN. A national organization, founded in 1878 to advance the science of jurisprudence, the administration of justice, harmony in legislation, and the observance of legal precedents throughout the United States,

as well as to uphold the legal profession and promote good understanding among its members.

The Association's sixty-second annual meeting was held in San Francisco, Calif., July 10-14, 1939. Frank J. Hogan, the retiring President, spoke at the opening session on "Important Shifts in Constitutional Doctrines." Other addresses and remarks of great interest were made by Mr. R. L. Maitland, K.C., representative of the Canadian Bar Association; Hon. Robert H. Jackson, then Solicitor General of the United States; Hon. James F. Byrnes, U.S. Senator from South Carolina; Mr. Stephen F. Chadwick, National Commander of the American Legion; Mr. W. F. Lilleston, of the Kansas Bar; Hon. Thurman Arnold, Assistant Attorney General of the United States; Hon. Charles Fahy, General Counsel of the National Labor Relations Board; and Hon. Calvert Magruder, Judge of the U.S. Circuit Court of Appeals for the First Circuit, and former General Counsel of the Wage and Hour Division of the U.S. Department of Labor.

The membership of the Association in 1939 was approximately 31,800. Its official organ is the *American Bar Association Journal*. Charles A. Beardsley, of Oakland, Calif., was elected President for 1939-40; John H. Voorhees, of Sioux Falls, S. D., was re-elected Treasurer; Harry S. Knight, of Sunbury, Pa., was re-elected Secretary; Joseph D. Stecher, of Toledo, Ohio, was re-elected Assistant Secretary; and Thomas B. Gay, of Richmond, Va., was re-elected Chairman of the House of Delegates. The headquarters of the Association are at 1140 N. Dearborn Street, Chicago, Ill. See LAW.

BARBADOS, bär-bä'dōz. A British crown colony in the West Indies. Area, 166 square miles; population (Jan. 1, 1939), 193,082. In 1938 there were 5327 births (27.3 per 1000), 3743 deaths (19.38 per 1000), and 869 marriages (9.02 per 1000). The average school attendance for 1938 in the 138 schools of all kinds was 21,707. Bridgetown, the capital, had 15,200 inhabitants.

Production and Trade. The principal products are sugar (111,414 tons in 1938) and cotton. Preliminary figures of the 1939 sugar crop place it at 157,000 tons. There are 107 sugar factories and 4 rum distilleries. Some 6014 tourists visited the colony during 1937. Sea fishing is an important occupation. In 1938, imports were valued at £2,086,901; exports, £1,354,155 (including re-exports, £135,576). Sugar, molasses, and rum accounted for £1,198,924 of the exports. Shipping entered Bridgetown (1938) totaled 2,191,793 net tons. Early in 1939 the Royal Dutch Air Lines commenced a thrice-weekly Trinidad to Barbados air service connecting with Curaçao weekly each way. Barbados had, in 1938, some 538 miles of roads.

Government. For the year ended Mar. 31, 1939 revenue totaled £559,484; expenditure, £560,038; net public debt, £379,052. For 1939-40, revenue is estimated at £526,543 and expenditure at £536,357. The government is administered by a governor who is aided by an executive council, a legislative council of 9 nominated members, and a house of assembly of 24 members elected by the people. During 1939 the Barbados celebrated the 300th anniversary of the first meeting of the house of assembly. In the same year there was agitation for the abolition of the constitution and the establishment of the crown colony system because it was thought that the colony would advance more rap-

idly without the brake of a house of assembly, which, in spite of the low franchise qualification, is elected by a small minority of the people. Governor, Sir E. J. Waddington (appointed Feb. 11, 1938).

BARLEY. The 1939 barley crop of the United States was estimated at 276,298,000 bu., 9 per cent more than the 253,005,000 bu. raised in 1938 and 19 per cent above the 1928-37 average and was grown on 12,600,000 acres versus 10,513,000 acres in 1938. The acre yield in 1939 averaged 21.9 bu. and in 1938 24.1 bu. The 1939 production of leading barley States was for Minnesota 59,808,000 bu., California 30,850,000, North Dakota 30,618,000, South Dakota 24,633,000, Wisconsin 22,591,000, Nebraska 14,651,000, and Iowa 13,794,000 bu. The seasonal average price per bushel received by farmers was 40.4¢ and the estimated value of production was \$111,716,000 in 1939 compared to 36.6¢ and \$92,605,000 in 1938. World production of barley, excluding the U.S.S.R. and China, was estimated at 1,712,000,000 bu. See *Crop Production in 1939* under AGRICULTURE.

HENRY M. STEECE.

BASEBALL. See SPORTS.
BASHKIR AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

BASKETBALL. See SPORTS.
BASQUE (bask) PROVINCES. The north central Spanish provinces of Alava, Guipúzcoa, and Vizcaya (Biscay). Total area, 2739 square miles; population (Dec. 31, 1934), 947,559. See SPAIN under History.

BASUTOLAND, ba-sōō'tō-länd'. A native territory in South Africa, governed by Great Britain. Area, 11,716 square miles; population (1936 census), 562,311 of whom 559,273 were Bantu natives, 1434 were Europeans, and 1604 were colored (other than Bantu). In addition there were 101,273 absentee Bantus working in the Union of South Africa. Capital, Maseru. A total of 82,808 pupils were enrolled in all schools for 1938. The chief products consist of grain crops, wool, and mohair. Livestock census (1938): 1,470,361 sheep, 489,574 goats, 434,990 cattle, 87,788 horses, 25,314 donkeys, and 1076 mules. In 1938, imports were valued at £749,126; exports, £401,512 (grain £208,377, wool £125,241, mohair £41,584). For 1937-38, revenue totaled £418,917; expenditure, £364,649. The territory is administered by a resident commissioner under the direction of the British High Commissioner for Basutoland, Bechuanaland Protectorate, and Swaziland, the latter having the power to legislate by proclamation. Resident Commissioner, E. C. Richards (appointed May, 1935).

BATES, ERNEST SUTHERLAND. An American author, died in The Bronx, New York City, Dec. 4, 1939. Born in Gambier, Ohio, Oct. 14, 1879, he was educated at the University of Michigan (A.B., 1902; A.M., 1903). Upon graduation he joined the faculty of Oberlin College as an instructor in English, remaining there until 1905. He then tutored in English at Columbia University during 1903-08, when he obtained his Ph.D. in the latter year, upon the thesis *A Study of Shelley's The Cenci*. Thereafter Dr. Bates became professor of English at the University of Arizona; in 1915 he transferred to a similar post at the University of Oregon, becoming professor of philosophy in 1921. He left in 1925, but subsequently was a professor in the

extension division of the University in 1930, 1932, 1935, and 1936.

Turning to literary work, Dr. Bates became editor of *The Dictionary of American Biography* in 1926 and in 1930 he joined the reviewing staff of *The Saturday Review of Literature*. During 1933-36 he was associate editor of *The Modern Monthly*, and in the last-named year lectured at the Federal Forum, Portland, Ore. Also during this period he wrote reviews for the *New York Times*, and in 1939 he became associated with "Books" published by the *New York Herald Tribune*, reviewing those works dealing with social topics and the theories of Karl Marx, on which he was an authority.

A critic and historian, Dr. Bates was the author of *The Friend of Jesus*, which was published in England under the title *The Gospel According to Judas* (1928); *This Land of Liberty* (1930), a study of the suppression of civil rights in American history; *Mary Baker Eddy—The Truth and the Tradition* (1932), with J. V. Dittmore; *The Story of Congress* (1936); *The Story of the Supreme Court* (1936); *Hearst, the Lord of San Simon* (1936), with Oliver Carlson; *American Hurly-Burly* (1937), a history of the year with Alan Williams; and *Biography of the Bible* (1937). He edited *The Four Gospels* (1932) and *The Bible Designed to Be Read as Living Literature* (1936), his best-known work. He had just completed *American Faith*, a history of American religious beliefs.

BATTLESHIPS. See NAVAL PROGRESS.

BAVARIA. See GERMANY.

BEAUX-ARTS INSTITUTE OF DESIGN. A school of fine arts in New York City, planned after the École des Beaux-Arts in Paris and organized in 1916 by the Society of Beaux-Arts Architects. The enrollment during the year 1938-39 consisted of 800 architectural students and 53 students of mural painting. The Department of Sculpture was reopened in January, 1939 with an enrollment of 36 students for the year. The most important prize is that given by the Society of Beaux-Arts Architects, which, amounting to \$3600, affords two and one-half years' study in architecture at the École des Beaux-Arts in Paris. In the Department of Architecture during the year 1939-40, the following prizes will be offered: Illuminating Engineering Society Prizes totaling \$850, Emerson Prize \$50, Warren Prizes, totaling \$75, House Beautiful Prizes totaling \$75, Architectural Forum Prizes totaling \$75, Spiering Prize \$50, Kenneth M. Murchison Prize \$50, S.A.D.G. Prize \$50, Romer Prize \$50. The directors for 1939-40 were: Institute, John W. Cross; Architecture, Otto Teege; Mural Decoration, Alois Fabry, Jr.; Sculpture, Wm. Van Alen; Chairman of the Board of Trustees, William E. Shepherd. Headquarters are at 304 East 44th St., New York City.

BECHUANALAND (bēch'ōō-ā'nā-lānd'; bēk'ū-) **PROTECTORATE.** A native territory in southern Africa, under British protection. Area, 275,000 square miles; population (1936 census), 262,756 (257,064 natives, 3793 mixed, and 1899 Europeans). The chief villages are Serowe (28,987 inhabitants), Kanye, Molepolole, Mochudi, and Maun. There were 131 schools in operation during 1937-38.

Production and Trade. The chief industries are animal husbandry and dairying. Grain production is dependent on the rainfall. Livestock (1938 census): 649,424 cattle, 438,683 sheep and goats.

Gold and silver mining are carried on, the output for 1937-38 being valued at £122,412. Customs duties are collected by the Union of South Africa and paid into the Union Treasury from which a proportionate payment is made each quarter to Bechuanaland. Trade (1938): Imports, £361,316; exports, £375,719. In 1938 there were 396 miles of railway, and 2048 miles of roads suitable for motor traffic.

Government. For 1937-38, revenue totaled £273,230; expenditure, £264,537. The protectorate is administered by a resident commissioner (with headquarters at Mafeking, Cape Province) acting under the British High Commissioner for Basutoland, Bechuanaland, and Swaziland. Laws are made by proclamation of the High Commissioner. The Native Administration Proclamation 74 of 1934 established native administrations and defined the rights and powers of chiefs. There is a native advisory council consisting of the chiefs and tribal representatives from the native reserves which meets usually each year under the presidency of the resident commissioner. European residents are represented by a European advisory council, consisting of seven elected members under the presidency of the resident commissioner, which is usually in session twice a year. Resident Commissioner, Capt. C. N. A. Clarke.

BEETLES. See ENTOMOLOGY, ECONOMIC.

BELGIAN CONGO. See CONGO, BELGIAN.

BELGIUM. A kingdom of Western Europe. Capital, Brussels. Ruler in 1939, King Leopold III, who succeeded to the throne Feb. 23, 1934.

Area and Population. Area, 11,775 square miles. Population, estimated at 8,386,000 on Dec. 31, 1938. Births in 1938 numbered 130,604 (15.6 per 1000); deaths, 108,682 (13.0); marriages, 61,402 (7.3). Estimated populations of the chief cities on Dec. 31, 1937, were: Brussels and suburbs, 910,154; Antwerp, 274,406; Ghent, 163,378; Liège, 161,834; Mechlin, 62,324; Deurne, 55,957; Borgerhout, 54,174; Bruges, 51,773.

Colonial Empire. See CONGO, BELGIAN.

National Defense. In 1938 Belgium had a standing army of about 86,000 men and 4600 officers. Of these 33,000 comprised the regular army recruited by voluntary enlistment and the rest were conscripts. Under the Military Law of 1937 conscripts are called up annually for terms of 12 and 17 months. They then serve 15 years in the regular army and reserve and 10 years in the territorial army. Total reserves in 1939 amounted to 800,000, but equipment to arm them all was lacking. The air force comprised about 500 planes and 400 pilots. There was no navy. On Sept. 1, 1939, Belgium had mobilized about 170,000 men and this force was increased to over 500,000 by the year end. See *History*.

Education and Religion. Infant, primary and adult elementary schools numbered 13,461 with 1,234,573 pupils on Jan. 1, 1938. There were 252 secondary schools with 79,203 students on Jan. 1, 1937, and 10,775 students in 4 universities (1937-38). A majority of those Belgians professing a religion are Roman Catholics. There is full religious liberty.

Production. One of the most densely populated countries of Europe, Belgium exists mainly by manufacturing, mining, agriculture, and commerce. Production of the chief crops in 1938 was (in metric tons): Wheat, 547,900; barley, 89,200; rye, 385,000; oats, 621,100; potatoes, 3,258,400; beet sugar (1938-39), 174,700; tobacco, 4800; linseed, 16,100. Livestock on Jan. 1, 1938, in-

cluded 1,710,037 cattle, 871,556 swine, and 264,464 horses. The 1938 output of the sea fisheries was 39,100 metric tons valued at 123,300,000 Belgian francs.

The 1938 mineral and metallurgical output was (in metric tons): Coal, 29,575,400; briquets, 1,702,470; coke, 4,703,120; pig iron and ferroalloys, 2,465,000; steel ingots and castings, 2,285,000; copper (smelter), 90,300 in 1937; lead (smelter), 84,600; zinc (smelter), 210,000. Leading manufactures include window and plate glass, paper and cardboard (235,000 metric tons in 1937), cement, cotton yarn, rayon, metal articles, brewery products, furniture, and other wood products.

Foreign Trade. Imports of Belgium and Luxembourg in 1938 totaled 23,165,507,000 paper francs (27,892,782,000 in 1937); exports, 21,723,853,000 (25,516,225,000). Of the 1938 imports, France supplied 3,325,802,000 francs; Germany, 2,598,563,000; United States, 2,559,332,000; Netherlands, 2,079,300,000; Belgian Congo, 1,933,287,000; United Kingdom, 1,835,820,000. Of the exports, France took 3,360,415,000 francs; United Kingdom, 2,972,291,000; Germany, 2,654,497,000; Netherlands, 2,614,454,000; United States, 1,442,053,000. See IMPORTS AND EXPORTS.

Finance. Budget estimates for 1939 placed ordinary receipts at 11,482,737,000 francs and expenditures at 11,583,061,000. The internal debt on Dec. 31, 1938, was 35,091,000,000 francs; external, 14,150,000,000 francs; total, 49,241,000,000 against 55,762,000,000 on Dec. 31, 1937. The unit of currency for foreign exchange transactions is the belga, equal to five paper francs. Belga averaged \$0.1689 in 1938 and \$0.1685 in 1939.

Transportation. Main line railways in operation in 1938 extended 3189 miles; operating receipts for 1938 were 2,542,000,000 francs, expenditures 2,713,000,000 francs. Highways extended 20,244 miles in 1939 (see ROADS AND STREETS). About one-fourth of the total merchandise traffic was carried on navigable rivers and canals; the waterways network was extended in 1938 by completion of the important Albert Canal (see History). Traffic statistics of the Belgian commercial air system (SABENA) in 1938 were: Route-miles, 2907; miles flown, 1,557,706; passenger-miles, 8,259,729; freight ton-miles, 174,976; mail ton-miles, 51,562. SABENA'S operating mileage in August, 1939, including lines to and in Belgian Congo, aggregated 8313 miles. A total of 17,815 vessels of 29,963,052 tons entered Belgian ports in 1938.

Government. Executive power is exercised by the King through a ministry responsible to Parliament. There is a Senate of 167 members and a Chamber of Deputies of 202 members, all elected for four years. Deputies are elected directly by universal male and restricted female suffrage. Of the Senators, part are elected by direct suffrage and part are chosen indirectly by the provincial councils. Premier at the beginning of 1939, Paul Henri Spaak (Socialist), heading a Catholic-Liberal-Socialist coalition ministry. For 1939 developments, see History.

HISTORY

The dread shadow of war loomed ever more threateningly over Belgium throughout 1939, greatly impairing the national economy and forcing both people and parties to sink their political differences and present a united front to internal and external dangers.

Political Developments. The heated controversy among the government parties over social and financial policy (see 1938 YEAR BOOK, p. 87-88) weakened the Spaak Government and contributed to its collapse early in 1939. Premier Spaak's downfall, however, came over his appointment of Dr. Adrian Maertens to a seat in the Flemish Academy of Medicine on February 1. Dr. Maertens was a Fleming who had been convicted of treasonable acts during the World War. His appointment, approved by a margin of only two votes in Parliament, precipitated violent protest demonstrations in Brussels during which the Premier himself was roughly handled by enraged war veterans. Shortly afterward an ultimatum presented by the Liberals forced the resignation of the cabinet (February 9). On the same date Parliament adjourned *sine die*.

After ex-Foreign Minister Henri Jaspar (Catholic), the King's first choice, had failed to form a new government, Senator Hubert Pierlot (Catholic) announced a Catholic-Socialist coalition cabinet, including non-party men, on February 21. It lasted only six days before a Catholic-Socialist clash over financial measures caused its resignation—held in abeyance pending the formation of a new ministry. The King was unable to find any leader capable of forming a stable cabinet and accordingly, at the request of the Pierlot Cabinet, dissolved Parliament on March 6 and called new elections for April 2. At the same time he addressed a letter to Premier Pierlot bluntly accusing the political parties of shirking their responsibilities, disregarding constitutional principles, and failing to respect the separation of governmental powers.

Elections. The Maertens incident had revived the old quarrel between Flemings and Walloons and the political campaign at first promised to widen the breach between the Flemish- and French-speaking sections of the country. However the German annexation of Bohemia and Moravia on March 15, coupled with a violent Nazi-directed agitation in Eupen and Malmédy for the return of these frontier Belgian districts to the Reich, aroused fear among the Belgians that they might suffer the fate of Czechoslovakia. The Flemish-Walloon issue was dropped with the resignation of Dr. Maertens from the Academy of Medicine and the elections proved a successful test of national unity.

The standing of the parties in the new Chamber of Deputies, with the former standing in parentheses, follows: Catholics, 73 (64); Socialists, 64 (70); Liberals, 33 (23); Flemish Nationalists, 17 (16); Communists, 9 (9); Rexists, 4 (20); independents, 2 (2). In the Senate the comparative standings, after the direct and indirect elections, were: Catholics, 62 (57); Socialists, 61 (66); Liberals, 25 (19); Flemish Nationalists, 12 (9); Rexists, 4 (12); Communists, 3 (4). With the exception of the slight gains made by the Flemish Nationalists, the elections thus showed a decided swing from the extremist to the old, middle-of-the-road parties. A most significant aspect of the election was the virtual elimination of the Rexists (Fascists) under Leon Degrelle, a disciple of Adolf Hitler's, whose candidates had registered startling gains in the 1936 elections. The Nazis in Eupen and Malmédy failed to elect a deputy, although polling nearly half of the vote in those districts, and the newly organized Walloon party made a poor showing.

Cabinet Reconstructed. Although the Catholics and Liberals together now held a small majority in the Chamber, King Leopold asked Premier Pierlot to reconstruct his cabinet to include the Socialists. The Socialist party, however, voted 310,000 to 248,000 against participation in the government. Consequently Pierlot on April 18 formed a government consisting of 6 Catholics, 4 Liberals, and 3 non-party members. In his ministerial declaration, Premier Pierlot committed his government to reconciliation of Flemings and Walloons and maintenance of the belga at its existing level. Emergency powers for strengthening the national defenses and national economy were granted the government by the Chamber on April 26.

The election and its aftermath served to check the monetary and financial crisis that developed as a result of political events during the first quarter of the year. This was marked by an important flight of capital, severe pressure on the belga (which forced the National Bank to pay out some 2,000,000,000 francs of its gold stock and more than 1,000,000,000 francs of its foreign-exchange holdings to prevent depreciation), and the revival of demands for further devaluation.

In the interval before the outbreak of the European war on September 1, the Pierlot Government was engaged in strengthening Belgium's armed forces and defense works along the German border. The Senate on April 29 rejected, 146 to 11, a Flemish Nationalist proposal for intensive fortification of the Franco-Belgian frontier. At Socialist insistence the government also undertook to curb German propaganda in Eupen, Malmédy, and the Flemish districts.

Albert Canal Dedicated. An outstanding event of the year, from the viewpoint of both national defense and economic development was the dedication of the giant 80-mile Albert Canal on July 30 when King Leopold unveiled a statue of his father at the head of the canal in the outskirts of Liège. The project for linking Antwerp and Liège with a canal enabling 2000-ton seagoing ships to take iron ore and other materials directly to the Liège steel district was started by King Albert in 1930. Its completion, scheduled for July, 1939, was postponed several months by a washout in June. The new waterway gave Antwerp a great advantage in its competition with Rotterdam for the shipping trade of southeastern Belgium, Alsace-Lorraine, and northeastern France. It was also designed to present a formidable obstacle to German invasion through the Netherlands. The banks were heavily fortified and a system of defensive flooding made it possible for the Belgians to inundate large areas adjoining the canal within a few hours.

Foreign Policy. The Brussels Government continued throughout 1939 its efforts of previous years toward European economic appeasement and peace (see 1938 YEAR BOOK, p. 88). On May 23 Queen Wilhelmina arrived in Brussels to return King Leopold's official visit to The Hague in 1938. In a statement on foreign policy before the Chamber on June 9 Premier Pierlot said that Belgium had no intention of concluding a military alliance with Holland or leaving the League of Nations, but that the government reserved the right to abandon its neutrality policy whenever national interest demanded it. He asserted that the country would not resort to war unless attacked or unless its vital interests in either Europe or Africa were threatened.

Oslo Powers Conference. Before the German-Polish controversy plunged Europe into war, the Belgian Government on August 21 urgently invited the Netherlands, Finland, Luxembourg, Norway, Sweden, and Denmark to discuss their mutual problems of preserving neutrality and maintaining their food and raw material supplies. Representatives of the seven states met in Brussels beginning August 23. That evening King Leopold broadcast by radio an appeal for the preservation of peace drafted by the Foreign Ministers of the participating powers. The conference disbanded on August 24, leaving a permanent committee in session in Brussels to work out joint economic measures for preserving their neutrality. Up to the end of 1939, tangible results of this effort at neutral collaboration were not apparent.

Belgian-Dutch Collaboration. However Belgian collaboration with the Netherlands became increasingly close and the idea of a defensive Belgian-Dutch alliance, uniting their economic and military forces, gained wide support. On August 29 King Leopold and Queen Wilhelmina in joint messages to the German, Polish, British, French, and Italian governments offered to mediate the issues threatening Europe's peace. The offer was not accepted.

Once the great powers had declared war, the Brussels Government, fearing that Germany would repeat its World War tactic and strike at France through Belgium to outflank the Maginot Line, immediately mobilized nearly half a million troops and made every preparation to resist invasion. A neutrality proclamation was issued September 5. German, British, and French planes that occasionally flew over Belgian territory were fired upon by anti-aircraft guns or attacked by Belgian military planes.

Although the belligerents at the outset of the war all gave Belgium formal assurances that they would respect its neutrality, the danger of a German invasion mounted as the war progressed. There were heavy concentrations of German troops along the Belgian-Dutch frontiers coincident with accusations in the Nazi press that the two countries were unneutral in failing to resist more effectively the British blockade. Fear of imminent attack was believed to have inspired the second formal offer of their good offices in bringing the war to an end, issued on November 7 by King Leopold and Queen Wilhelmina after Leopold had arrived suddenly and unexpectedly at The Hague. On his return to Belgium the next day King Leopold called an emergency cabinet meeting, reportedly to consider a defensive military alliance with the Netherlands.

The rejection of this second mediation offer was followed on November 12 by a surprise conference of the Belgian and Dutch Foreign Ministers at Breda on the Netherlands side of the frontier. On November 21 King Leopold and Foreign Minister Spaak paid another visit to the Dutch capital. Two days later the two governments made separate protests against the extension of the Anglo-French blockade to include German goods exported through neutral countries. Some confirmation of a Belgian-Dutch defensive accord was seen in Foreign Minister Spaak's statement before the Chamber of Deputies on December 19 that "Belgium would never be indifferent should the independence of the Netherlands be threatened." Meanwhile King Leopold, in a radio address of October 26 to the United States, appealed for

American support and encouragement "in the attitude we have adopted for the good of peace in the service of civilization."

Economic Effect of War. Belgian trade and industry, which had shown an upward trend during July and August, were disorganized by the establishment of the Franco-British blockade and the mobilization of nearly 500,000 men. The German submarine, mine, and air warfare upon Allied and neutral shipping around the British Isles inflicted another severe blow upon Belgium's vital foreign trade. Stocks of foodstuffs, raw materials and other commodities were reduced and prices rose. Despite the large number of men called to the colors, there was a substantial increase in general unemployment.

To meet this emergency the government issued a series of decrees curbing price rises and profiteering, conserving food and raw material supplies through an import- and export-licensing system, and requiring extension of the cultivation of wheat, rye, sugar beets, and potatoes. Negotiations were also initiated with Great Britain, France, Germany, and the United States in an effort to assure continuance of as large a volume of foreign trade as possible. But the end of the year found the Belgian people suffering definite war privations. To make matters worse the Belgian Government was compelled to contribute heavily to the support of more than 25,000 Jewish refugees from Germany and Austria, three-fourths of whom were without means of support. In mid-December the government reached an agreement with Britain and France permitting food imports in quantities normally imported before the war without submission to the Allied blockade regulations.

See FRANCE, GERMANY, GREAT BRITAIN, and NETHERLANDS, *THE*, under *History*; FAIRS AND EXPOSITIONS.

BENEFACTIONS. Philanthropic giving increased about 25 per cent in 1939 over the previous year in the largest cities of the United States, according to a study conducted by the John Price Jones Corporation of New York. (The cities included in the study are New York, Chicago, Philadelphia, Boston, Washington, and Baltimore.) The increase is accounted for by a single gift—the presentation by Samuel H. Kress to the National Gallery of Art at Washington of a collection of paintings valued at \$25,000,000. If the Kress gift were deducted, the total would show a decline from 1938.

Of the various fields of philanthropy, foreign relief (see WAR RELIEF) showed the largest gain in the six cities, with publicly announced gifts of \$4,074,573 in 1939, as compared with \$588,595 in 1938. Gifts for education totaled \$20,594,224; health activities, \$3,903,653; recreation, \$253,102; religious activity, \$1,404,357. Gifts to the fine arts, apart from the Kress collection, showed an increase in 1939.

The accompanying table lists individual gifts and bequests of \$250,000 or more, as announced in United States newspapers and periodicals in 1939 and compiled in *Giving Today* (issued by the John Price Jones Corporation). The table excludes grants from the Rockefeller Foundation, the Carnegie Corporation, and the General Education Board, which are reported in the articles on those organizations. See also ART MUSEUMS; COMMUNITY CHESTS AND COUNCILS; EDUCATION; LIBRARY PROGRESS; RELIGIOUS ORGANIZATIONS; and articles on other philanthropic groups, as the Red Cross.

National Gallery of Art: Gift of 375 paintings and 18 pieces of sculpture appraised at \$25,000,000 from Samuel H. Kress.

Northwestern University: Gift of \$6,735,000 from the Walter P. Murphy Foundation for the establishment of an institute of technology.

George F. Harding Art Collection: A collection bequeathed to the people of Chicago by George F. Harding, valued at \$5,000,000 and including, in addition, the medieval castle in which it is housed.

Guggenheim Foundation: Bequest of \$5,000,000 from Murry Guggenheim.

John Sealy Hospital: Bequest of \$4,000,000 from Mrs. Jennie Sealy Smith, Galveston, Texas, representing the balance of her will.

University of Chicago: Bequest valued at \$3,500,000 from Albert D. Lasker of Chicago.

University of Texas: Bequest of \$2,500,000, the residue of the estate of Will C. Hogg of Houston, for a foundation to bring distinguished lecturers to the University.

University of Chicago: Bequest of \$2,000,000 for medical education and research from Orson C. Wells.

Yale University: Bequest of \$1,800,000 from Edward Cobb.

Johns Hopkins University: \$1,500,000 estate left by John Martin Vincent, retired Professor of History.

J. W. Van Dyke Scholarship Foundation: An educational fund for children of employees of the Atlantic Refining Co., set up by a bequest of \$1,500,000 from John Wesley Van Dyke of Philadelphia.

Northwestern and Chicago Universities: Gifts of \$1,500,000 and \$1,000,000 respectively announced by the trustees of the estate of Clara A. Abbott, Evanston, Ill.

Rensselaer Polytechnic Institute: Three professorships established in recognition of gifts from the late Mrs. Russell Sage (\$1,250,000), the late Mrs. Robert W. Hunt (\$200,000), and Mrs. R. J. C. Walker (\$220,000).

Yale University: Bequest of \$1,250,000 from Hugh Campbell of St. Louis, who died in 1931 (will upheld in Circuit Court, June 20, 1939).

Emory University: Gift of \$1,000,000 from Samuel C. Dobbs of Atlanta.

Jewish Education Committee of New York: Gift of \$1,000,000 from the Friedsam Foundation, for religious instruction among Jewish youth.

Odd Fellows' home for Orphans and Aged Members at Elkins: Gift valued at \$1,000,000 from Miss Laura Amos and her two brothers of Farmington, W. Va.

Portland, Oregon, Public Schools: Gift of \$1,000,000 from Samuel Bissinger for handicapped children.

Presbyterian Church in the United States: Bequest of \$1,012,573 from Charles K. Smith of Philadelphia, released by the death of his son. The Woodmere Art Gallery received \$286,586 by the will.

Wilmington Hospital: A \$1,000,000 fund for a hospital for crippled children from the Nemour Foundation established by Alfred I. du Pont.

Yale University: \$1,000,000 trust fund established by Mrs. Ellen Battell Stoeckel for the study of music, art, and literature.

Harvard Law School: Bequest of \$700,000 from Augustus G. Cobb of New York, who died in 1930 and willed the income from his estate to his brother for life.

Johns Hopkins University: Gift of \$650,000 in the will of Alfred Jenkins Shriver of Baltimore, for a lecture hall.

Yale University: Bequest of \$525,000 from Frank Miner Patterson of New York, for needy and deserving students.

Cleveland Museum of Art: Bequest of \$500,000 from Mrs. Julia Morgan Marlatt of Cleveland.

New England Deaconess Association and Deaconess Hospital (Spokane): Bequest of \$500,000 and \$300,000 respectively from Theodore Chamberlin.

Western College for Women, Oxford, Ohio: \$478,500 received when the will of Edward Hidden of St. Louis was upheld in the Circuit Court. By the same will Yale University received \$159,500.

Hahnemann Medical College and Hospital: Gift of \$450,000 from Mrs. Emilie Foster Klahr in memory of her husband.

American Academy in Rome: Bequest of \$400,000 from the estate of Charles F. McKim left in trust to his daughter in 1909.

Boston Museum of Fine Arts: Gift of a collection valued at \$400,000 from Mr. and Mrs. Maxim Karolik of Newport, R. I.

Centre College of Kentucky: Bequest of \$400,000 from Guy Easton Wiseman, Danville, Ky.

Metropolitan Museum, N. Y.: Bequest of \$400,000 from Mrs. Edith Perry Chapman of Elmira, N. Y.

Wellesley College: Bequest of \$380,000 from Alice Cheney Baltzell of Dover, Mass.

Ball State Teachers College, Muncie, Ind.: Gift of \$375,000 from the Ball families for a men's residence hall.

Alfred P. Sloan Foundation: Grants of \$367,520 to 10 institutions, to be devoted mainly to popular economic education.

Memorial Art Gallery, Rochester, N. Y.: Bequest of \$365,000 from Hannah G. Gould of Rochester.

Worcester Polytechnic Institute: Gift of \$350,000 from the George I. Alden Trust for a student activities building.

University of Rochester: Bequest of \$319,000 from Francis R. Welles for a woman's dormitory.

Art Associates (sponsoring the Masterpieces of Art at the N. Y. World's Fair): Gift of \$300,000 from Mrs. George de Cuevas.

New England province of the Society of Jesus: Gift of 400 acres of land and buildings valued at \$300,000 in Lenox from Edward Cranwell of New York for the establishment of Cranwell Academy, a Jesuit preparatory school.

Queeny Foundation: A foundation established by the children of John Francis Queeny with the gift of Monsanto Chemical stock valued at \$300,000.

Princeton University: Bequest of \$275,588 from Mrs. Mirah R. Stewart, to be used in a Henry Clay Stewart Endowment Fund for young men from the District of Columbia.

Tusculum College: Gift of \$275,000 from Cyrus McCormick, San Bernardino, Calif.

Johns Hopkins Hospital: Bequest of \$263,000 from Harriet S. Lederer of Baltimore.

Rhode Island Hospital: Bequest of \$250,000 from Col. Joseph Samuels to expand the dental clinic he had previously given.

Roosevelt Hospital, N. Y.: Gift of \$250,000 made by Edward S. Harkness on condition that the Hospital raise the \$2,967,000 needed.

University of Oregon: Bequest of \$250,000 from Mildred Anna Williams of New York, who also left \$220,000 to the Community Trust.

BEREA COLLEGE. A nonsectarian coeducational institution in Berea, Ky., founded in 1855 and designed to serve the educational needs of the mountain people of the Southern Appalachian region. The enrollment for the autumn of 1939 was 1791, distributed as follows: College of arts and sciences, 813; secondary school and below, 925; nurses 53. The enrollment in the summer session of 1939 was 266. The faculty numbered 119. The endowment amounted to \$10,176,265 and the income for the year ending June 15, 1939 was \$584,147. The library contained about 81,000 volumes. President, Francis S. Hutchins, LL.D.

BERGDOLL CASE. Grover Cleveland Bergdoll, a wealthy Philadelphian of German extraction and sympathies, evaded the military draft in 1918; was caught in 1920, convicted by a military court as a deserter, and sentenced to prison for five years; escaping after his sentence, he took refuge in Germany.

On May 25, 1939, Bergdoll, facing steps on the part of the Government to carry out the confiscation of assets that he had in the United States, arrived at New York by the liner *Bremen*, to surrender and face charges. He was tried at Governors Island on a second charge, relating to the desertion involved in his escape of 1920, and sentenced to an additional three years of prison. The Government thereafter offered to return to him 80 per cent, or about \$300,000, of seized property.

Bergdoll maintained that he had never been formally enlisted as a soldier and that he had evaded service because of conscientious objections. According to his testimony, corroborated by that of other witnesses, including his German wife, he had made several trips to the United States during the years when he was supposed to be living in Germany.

BERMUDA. A British crown colony in the North Atlantic, 677 miles southeast of New York. It comprises some 360 small islands of which 20 are inhabited. Area, 19.3 square miles; civil population (Mar. 26, 1939 census), 30,814 (11,481

white, 19,333 colored). Chief towns: Hamilton (capital), 3259 inhabitants; St. George, 1000. During 1938 there were 769 living births (24.4 per 1000) and 332 deaths (11.4 per 1000). Pupils registered in the schools in 1938 totaled 4723, and the average attendance was 85 per cent. Bermuda is the headquarters for the West Indies and Atlantic Squadron of the British Navy.

Production and Trade. Agriculture, with the exception of the tourist trade, is the chief industry. There are about 1000 acres of farming land under arable cultivation and most of it bears from two to three crops a year. The main crops consist of potatoes, onions, lily bulbs, cut flowers, and green vegetables. Bananas and arrowroot also are grown. During 1938, a total of 82,062 tourists visited Bermuda. In the same year the shipping that entered and cleared the colony aggregated 6,441,284 tons. Pan American Airways and Imperial Airways carried 5515 passengers during 1938 in the Bermuda-United States service. In 1938, imports were valued at £1,906,688; domestic exports, £51,003; re-exports, £94,940. There were (in 1938) 102 miles of roads.

Government. For 1938, revenue totaled £460,002; expenditure, £452,072. On Dec. 31, 1938 the public debt totaled £75,000 against which the sinking fund was £50,212. The colony is administered by a governor, assisted by an executive council of 7 members. Legislation is enacted by a legislature composed of the governor, a legislative council of 9 members (3 official and 6 nominated unofficial), and an elected house of assembly of 36 members (4 elected from each of the 9 parishes). Each voter must own freehold property of \$300 in value. Governor and Commander-in-Chief, Maj.-Gen. Sir D. J. C. K. Bernard (assumed office, Oct. 9, 1939).

History. On Jan. 21, 1939, the Imperial Airways flying-boat *Cavalier*, in service between New York and Bermuda, was lost at sea after making a forced landing. Three of the 13 people on board lost their lives. Because of the seriousness of the political situation in Europe the Acting Governor assented (Aug. 24, 1937) to the Emergency Powers Act which had been rushed through the legislature. He said that a state of national emergency existed and thus invoked the full powers of the act to govern by regulations which included conscription for the defense of the islands.

BESSARABIA. A province of Rumania (since Apr. 11, 1918), formerly a government of Russia. Area, 17,146 square miles; population (July 1, 1937 estimate), 3,110,654. Capital, Chisinau (Kishenev), 117,101 inhabitants in 1937.

BIBLE SOCIETY, AMERICAN. Organized in 1816, this society has steadily carried forward its specific purpose of "circulating the Holy Scriptures without note or comment" and without discrimination as to class, color, or creed. Bibles, Testaments, and Portions are sold without profit and below cost or donated free when circumstances justify. During the 123 years of its existence, the society has issued 290,663,685 volumes and participated in the translation, publication, and distribution of the Scriptures in nearly 300 languages, dialects, and versions.

The work in the United States is carried on through 11 home agencies and some 100 auxiliary, State, and local Bible societies. Latin America and the Near East and Far East are covered by 12 additional agencies, while correspondents help carry on the work in other countries, especially in Europe and Africa. During 1938 the society

issued 6,970,757 volumes in 174 languages, including 6337 volumes for the Blind. The number issued in the United States was 3,370,563, and in foreign lands, 3,600,194. Engaged in this distribution were 3425 agency secretaries, sub-agents, colporteurs, correspondents, and volunteers.

The budget of the society for 1939 was \$958,931. The officers were John T. Manson, president; the Rev. Eric M. North, D.D., and the Rev. Frederick W. Cropp, D.D., general secretaries; the Rev. Francis Carr Stifler, D.D., recording and editorial secretary; Mr. Rome A. Betts, associate secretary, Rev. James Oscar Boyd, assistant secretary, and Gilbert Darlington, treasurer. Headquarters of the society are in the Bible House, Park Avenue & 57th Street, New York City.

BILLIARDS. See SPORTS.

BILLITON. See NETHERLANDS INDIES.

BIOLOGICAL CHEMISTRY. The selection of papers from which this review has been written has again this year been a difficult task. The year has witnessed no slackening of the pace of publication of experimental data, and the field has become so fertile that in limited space a complete survey is impossible. It can be stated, conservatively, that the subject continues to expand and many important developments have been reported. Especially is this true in the field of the vitamins.

Stiller, Keresztesy, and Stevens have completed the determination of the structure of Vitamin B₆ and have shown it to be 2-methyl-3-hydroxy-4,5-di-(hydroxymethyl)-pyridine. This structure has also been confirmed by Kuhn. The Merck investigators have also synthesized this compound by a series of reactions starting with the condensation of ethoxyacetyl acetone and cyanoacetamide. The substituted pyridone so obtained was then nitrated and the nitro-derivative treated with phosphorus pentachloride. Reduction of this product gave 2-methyl-3-amino-4-ethoxymethyl-5-cyano-6-chloropyridine. Treatment of this compound with hydrogen in the presence of platinum produced a substance which on diazotization with nitrous acid gave the corresponding 5-hydroxymethyl pyridine. When this compound was hydrolyzed with concentrated hydrobromic acid a dibromide was obtained which on treatment with silver oxide in the presence of silver chloride gave the hydrochloride of Vitamin B₆, a compound identical in all its properties with the hydrochloride of the natural vitamin.

It is to be recalled that this vitamin is that factor of the Vitamin B complex which prevents or cures acrodermatitis. Lack of it has also been found to produce microcytic hypochromic anemia. Birch has suggested that the physiological function of Vitamin B₆ is connected with utilization of the unsaturated acids. It has also been reported that if this vitamin be added to the usual Vitamin B₁ or Vitamin B₂ supplement it not only produces a cure of the dermatitis but also stimulates growth.

On page 90 of THE NEW INTERNATIONAL YEAR BOOK for 1937 this reviewer reported that increasing attention had been given to the anti-hemorrhagic vitamin designated as Vitamin K. This new substance which last year was in the process of gradual evolution now finds itself the center of very exciting and highly competitive investigations. First isolated by Doisy from alfalfa it can now be stated with certainty that it is a light yellow oil which changes into a crystalline condition

on crystallization from cold acetone or alcohol. On the basis of its degradation products Doisy has shown that its structure is 2-methyl-3-phytyl-1,4-naphthoquinone. Similar conclusions have also been reached by Fieser and his students, and by Almquist and Close. On the basis that this natural vitamin is a naphthoquinone, several laboratories announced almost simultaneously the synthesis of substituted quinones having anti-hemorrhagic activity. In fact the chemical properties and absorption spectra of these synthetic model compounds and the marked anti-hemorrhagic activity of one of them in particular (2,3-dimethyl-1,4-naphthoquinone) gave strong support to the view that the natural vitamin was a substituted naphthoquinone. The names of Doisy, MacCorquodale, Fieser, Almquist, Close, and Fernholz are associated with this work.

Confirmation that the structure of this vitamin is as proposed above has been submitted in the form of its synthesis both by Doisy and by Fieser. Starting with the monosodium salt of 2-methyl-1,4-naphthohydroquinone the vitamin was prepared by the condensation of this metallic derivative with phytol bromide. It was isolated in the form of its diacetyl dihydro-derivative and the synthetic compound so obtained was degraded by the same procedure as used for the natural vitamin. By using a large excess of methyl naphthohydroquinone to accelerate the bimolecular condensation reaction and by operating at a temperature (75°C) where cyclization is slow it is possible to produce considerable amounts of the phytol substituted hydroquinone. In concluding the review on the work of this particular vitamin it should be pointed out that most of the investigators have assumed that in the isolation of this compound from natural sources such as alfalfa meal, there has been no change in the structure during the isolation process. This may or may not be true. It will be recalled that during investigations on Vitamin E it was first believed that this compound was a quinone derivative. Further work, however, showed it to be a chromone type of compound. Experience gained from this work would suggest that here also in the case of Vitamin K₁ there are interesting possibilities of such a type of structure.

Doisy has also announced the isolation of a second vitamin designated by him as Vitamin K₂. Whereas Vitamin K₁ at room temperature, is a light yellow oil, Vitamin K₂ as isolated from sardine meal is a light yellow crystalline solid of a melting point 51-52°. Various preparations of this compound have shown uniformly a potency of approximately 600 units per milligram. It will be recalled that the potency of Vitamin K₁ is 1000 units per milligram. Doisy is of the belief that this second vitamin is also a quinone since it forms a diacetate of the dihydro-derivative. The melting point of this diacetate is 60° and evidence has been submitted to show that in reality it is a 2,3-disubstituted naphthoquinone, with six double bonds in the side chain.

Before concluding this phase of the review of the year's work the results of certain other investigations should be noted. An anti-gray hair vitamin, a new factor of the Vitamin B complex is claimed to have been isolated by Lunde and Kringstad. In the past several authors have claimed the existence of a rat-growth filtrate, the lack of which causes the black fur of the rat to turn gray. The above authors believe, however, that the anti-gray hair factor, called by them B₁₁,

is distinct from the "filtrate"-growth factor called B_{12} . This new B_{12} factor, for example, is soluble in phenol and is more heat labile than the other factors belonging to the "heat stable" group of the Vitamin B complex. They report that it is found in brewer's yeast and especially in the livers of mammals. In this same connection, Emerson and Evans report that in an attempt to purify the "filtrate factor" they have obtained evidence that this factor must consist of at least two entities. One of which can be extracted from acid solution by ether, while the other factor remains in the residue. They are of the opinion that their present work indicates that the "anti-graying" activity belongs with the ether-soluble component. Jukes has also reported certain facts concerning this vitamin which are of interest. He finds that its activity is destroyed in alkaline solution at 100° , but that it is stable in alkali at room temperature. He also finds that in acid solution its activity is completely destroyed with potassium permanganate. In the opinion of this reviewer these facts would suggest that perhaps we are dealing with a compound which is an α - β -unsaturated ketone. There are investigators who are of the belief that this factor is identical with that previously called the "chick anti-dermatitis" factor. This may or may not be true. At any rate, the "chick anti-dermatitis" factor appears to be very similar to pantothenic acid, a vitamin now being studied by Williams, and whose molecule is known at the present time to contain one carboxyl group, two hydroxyl groups and probably a substituted amide group, since β -alanine is one of its cleavage products.

Other facts concerning the behavior of this acid have been reported. Williams finds, for instance, that it appears to be synthesized by yeast only when β -alanine is present in the culture medium. According to the experiments of Reichstein obtained from rats which have been fed on a diet deficient in this filtrate factor, it would appear that β -alanine is the essential part of the whole molecule of pantothenic acid, since rats react in a wholly similar manner to both β -alanine and to pantothenic acid. This view is supported by the interesting fact that a product has been synthesized by Subbarow and Rane which is able to replace pantothenic acid in an otherwise chemically defined medium. The compound is made by the condensation of β -alanine ethyl ester with the acid chloride of α , δ -diacetoxy valeric acid. The only difference in its behavior which was noted was that the synthetic product was needed in somewhat larger amounts.

In 1938 this reviewer reported that a very outstanding advance had been made in chemotherapy in the discovery of the utilization of sulfanilamide in the treatment of a variety of bacterial infections. The work, this year, has consisted mainly in the preparation of derivatives of this highly important substance, and in the investigation of their physiological activity from this point of view. Of interest in this connection are the results of Adams *et alia* who have prepared a variety of p -acylamidobenzene-sulfonamides. Although all show less anti-streptococcal activity than sulfanilamide itself, practically all of them are much less toxic. The anti-meningococcal activity of many of them has also been studied, and results indicate that in many cases it is equivalent to that of sulfanilamide.

Crossley and co-workers have made certain pharmacological studies on N^1 - N^4 -diacylsulfanila-

uide and N^1 -acylsulfanilamides. They report that in the case of N^1 -dodecanoylsulfanilamide results have been obtained which show that the compound is effective in mice, not only against infections by beta-hemolytic streptococci, but also in arresting the spread of tuberculosis infections.

The physiological activity of certain derivatives of 4-4' diamino diphenyl sulfone has been investigated. Raiziss and co-workers have found that diamino diphenyl sulfone itself is superior to sulfanilamide in its therapeutic effect. The aminohydroxysulfones and their acetyl derivatives are about equal to sulfanilamide in this property.

A marked advance has been made during the year in the discovery that compounds of the above type are effective in the treatment of various types of pneumonia. Especially is this true in the case of sulfapyridine. The mortality figure in adults has been greatly reduced. Many cures have been reported by the use of this compound. It has been found to be especially good when used in conjunction with the various sera. It has been reported that it is effective in a large number of cases of malaria. Other compounds are of interest in this connection. Sulfanilyl-sulfanilamide has been used effectively in at least one severe case of lobar pneumonia and septicemia, a disease which carries a mortality rate of 98 per cent. This compound does not influence, however, the clinical course of group IV pneumonia cases. It is potent, however, in the treatment of gonorrhea in the male. One investigator reports 94 per cent clinical cures in an average of ten days, and according to him the compound is 50 per cent more effective and 50 per cent less toxic than sulfanilamide itself. It also has been found that it is effective in the treatment of scarlet fever. The duration of fever was not only shortened, but the incidence of complications, etc., was decreased. It did not shorten, however, the duration of the rash. Finally it has been found that many types of gonorrhea resistant to sulfanilamide itself will respond promptly to sulfanilyl-sulfanilamide.

Other new types of compounds have been studied and have been found effective in the treatment of pneumonia. The mortality figure has been greatly reduced by the use of hydroxyethyl apocupreine. It has also been shown that this compound has no disturbing effect on the vision. In concluding this phase of this review it should be noted that compounds formed by substitution of the amide group (e.g. p -aminobenzene sulfonamidopyridine) are very effective in the treatment of experimental streptococcal, pneumococcal, and gonococcal infections. It has also been observed clinically that the acetyl and formyl derivatives of bis- p -aminophenyl sulfone are likewise effective against these infections.

Progress continues to be made in our knowledge of the proteins. On the theoretical side Neurath has developed a method for the estimation of the relative and absolute dimensions of protein molecules. The data indicate that most proteins are asymmetric in shape. He finds that when proteins are grouped on the basis of their molecular dimensions a certain regularity exists independent of the molecular weight. Comparison of the dimensions of proteins with their respective dissociation and aggregation products indicates that cleavage occurs only in directions parallel to either the major or minor molecular axis. A similar relationship holds for the absolute dimensions of the anti-pneumococcus serum globulins. These proteins seem to differ chiefly in respect

to the length of the molecule if the species from rabbit, man, and horse are compared with each other.

Work on the isolation of new crystalline proteins continues. Kunitz reports that he has isolated from beef pancreas a crystalline protein which acts as a powerful digestive enzyme for yeast nucleic acid. It is interesting to note that the digestion of the acid is accompanied by little, if any, release of inorganic phosphorus. Balls and Linerweaver have published a description of a method for the isolation of crystalline papain from papaya latex. They find that the enzyme is activated by cyanide compounds and by sulfhydryl compounds. It will digest hemoglobin with a velocity comparable to the pancreatic proteinases. It clots milk and hydrolyses hippuric acid amide. It is stable in dilute alkali up to a pH of 10.5 but it is unstable in dilute acids below 4.5. Alder, v. Euler, and Günther report that they have a flavoprotein in heart muscle which has all the properties of diaphorase.

The year has witnessed a notable advance beyond that achieved 30 years ago by the German scientist, Emil Fischer, in the synthesis of polypeptides of high molecular weight. Pacsu has reported that the hexapeptide ester of glycine undergoes condensation into the 96 and higher (3×2^n) peptide esters. It is of interest to note that this type of condensation is different from that exhibited by dipeptide esters, for if they were the same one would have expected that "cyclol 6" would have been formed. The experiments were carried out by heating the pure hexapeptide ester at a constant temperature of 102°. The results show that instead of cyclization the hexapeptide ester undergoes a type of condensation characteristic of the tripeptide ester. The high molecular weight polypeptide ester mixture so obtained is a colorless material of amorphous appearance. Its properties are similar to those of denatured proteins, and like many of the latter substances, the mixture is soluble in a concentrated solution of urea. It also gives a biuret reaction.

During the past year interest in the field of the carbohydrates seems to have increased. Hudson has continued his oxidation studies of the sugars with periodic acid. He and his co-workers report that oxidation of α , α -trehalose with periodic acid in aqueous solution, and subsequent oxidation of the product so formed with bromine water in a solution kept neutral with strontium carbonate, produces a 55 per cent yield of the crystalline strontium salt of oxybis (hydroxy-methyl diglycolate). The structure of this salt together with the two glyceric acid moieties in the molecule prove that each of the two glucose molecules of the trehalose molecule possesses the pyranose structure.

Pacsu and his students have continued their work on the ketone sugars. They have shown that Hudson's rules of isorotation hold closely in the *l*-sorbitose series provided certain constants are applied separately to the alpha and beta derivatives. The rotation of the alpha and beta isomers can be calculated by introduction of a factor *F* in the equation. It also has been found that the reaction between α -acetochlorosorbitose and methyl alcohol gives rise to an ortho ester, and only to a small amount of the true β -alkyl sorbitoside tetraacetate. Periodic acid oxidation has shown that both α -methyl and β -ethyl sorbitoside have the pyranoid ring structure. These investigators have also reported the synthesis of a new

disaccharide, 1- β -glucosido-fructose. Since this synthetic sugar is entirely different from turanose this work, together with work previously published, shows beyond reasonable doubt that turanose must be 3- α -glucosido-fructose. Melezitose, therefore, is the corresponding sucrose derivative. The preparation of crystalline d-fructose dimethyl acetal in good yields and of β -methyl mannofuranoside and mannose dimethyl acetal has also been announced, and a new mechanism for the reaction of sugar acetals with alcoholic mercuric chloride has also been suggested.

Notable advances continue to be made in the field of sterols and hormones. Fernholz and Stavely for the first time have been able to prepare a dibromide of stigmaterol in which the two bromine atoms are in the 22 and 23 positions of the molecule. Marker has continued his studies on urane and its derivatives. Uranedione 11,20 and uranetriene 3,11,20 have been prepared. Catalytic reduction of the trione produced a uranediol, the ketone group at the C 20 position being completely reduced to the hydrocarbon. These investigators have also continued their analyses of pregnancy urine, and among the interesting facts obtained it can be noted that mare's pregnancy urine has been found to differ from other urine chiefly in the proportion of the three pregnanediols present, allopregnanediol-3 β , 20 α , being present in considerable amounts.

Wallis and his students have continued their studies on molecular rearrangements in the sterols and have established beyond doubt the structure of the isomeric ethers of cholesterol. From *i*-cholestanone, a ketone prepared from *i*-cholesterol itself, they have prepared a new dicarboxylic acid. This acid has been shown to be an isomer of a new acid obtained from β -3 chlorocholestanone-6. A third isomeric acid has also been prepared from α -3 chlorocholestanone-6. The existence of these isomers can only be explained on the basis of a cyclopropane bridge in ring A of the sterol molecule. These investigators have also continued their studies in the sitosterol complex. Experiments have been described which have a direct bearing on the structure of α_1 -sitosterol, and which strongly suggest that this sterol has two double bonds in positions 5-6 and 8-14 in the sterol molecule. They report that only one of the double bonds can be hydrogenated under ordinary conditions, and evidence is submitted which shows that α_1 -dihydrositosterol so obtained is an α -stenol. The second double bond can be isomerized by dry hydrogen chloride into a position which is easy to hydrogenate. This α_1 -isodihydrositosterol is a β -stenol. The isolation of a new sterol, α_1 -sitosterol, has been reported by these investigators. This sterol in all probability is an isomer of stigmaterol and titration with perbenzoic acid shows that two double bonds are present in the molecule. A further study of its structure is being made. Ladenburg, Fernholz, and Wallis have reported the results of their study on the separation of sterol esters by means of the chromatographic adsorption method. The sterol esters used were those of azobenzene monocarboxylic acid, and mixtures of sterols containing a different number of double bonds have been found, in accordance with the theory, to be easy to separate, the more double bonds the sterol has the stronger is its adsorption. The use of highly colored esters made the development of the chromatogram very easy to follow.

Much work continues to be published in the

field of the hormones. Mamoli has been able to convert (by the use of enzymes) certain pregnenolones into desoxycorticosterone. Butenandt has developed new methods for the transformation of dehydroandrosterone into progesterone. Serini by use of the acetylene reaction reports that he has finally been successful in preparing desoxycorticosterone from dehydroandrosterone. By means of yeast Wettstein has converted oestrone into oestradiol. Ehrhart has described experiments which show that in the presence of lead tetraacetate progesterone is oxidized to desoxycorticosterone. Bachman, Cole, and Wilds have announced the total synthesis of equilenin. To this reviewer, this is of great interest since it is the first time that the steroid skeleton has been synthesized, and the method of synthesis proves beyond all doubt that the second methyl group in steroids is at position 13.

Of unusual interest have been the recent reports of several investigators that patients with Addison's disease who were undergoing treatment with synthetic desoxycorticosterone develop cardiac insufficiency and die. It would thus appear that clinical tests have thrown great doubt on the value of this compound for medicinal use. After all signs of adrenalin insufficiency have gone, and even after the blood pressure has returned to normal, patients suddenly complain of rapidly progressing weakness, and, in some of the cases reported, have died within a short time.

Great progress has been made in the preparation of simple compounds having hormone activity. Dodds and co-workers have found that many derivatives of stilbene and diphenylethane containing phenolic hydroxyl groups are highly physiologically active. Diethylstilboesterol and its hydrogenated products may be mentioned in this connection. Diethyl stilboesterol itself shows marked oestrogenic activity. In several cases, however, in which it was used, unpleasant secondary effects, such as nausea or vomiting were produced. It has also been reported by Greene *et alia* that this compound when injected into a young white rat has marked effect on its sexual development. It has also been reported that this substance causes a decrease in weight of the thymus. This is similar to the effect of oestrone. Mühlbock, however, reports certain differences between the effects of oestrogenic hormones and diethyl stilboesterol. When this latter substance is smeared on the comb of the chicken no antagonistic action has been observed; the oestrogenic hormones, on the other hand, do produce these effects. It should be pointed out, however, that such differences, may be due to the fact that in the one case the substance is not resorbed.

Dodds has reported that the hydrogenation product of diethylstilboesterol is also very potent. This phenol produces an oestrus-response in rats when administered in doses of 0.20 per cent. Doses of 0.10 gave 20 per cent response.

In reviewing the work of the year in endocrinology, the experiments of Swingle and his students, in the opinion of this reviewer, are the most worthy of note. These investigators have continued their work on the extraction and purification of renin, which, it is to be recalled, is the pressor substance found in the kidney cortex. A fractional precipitation method employing salt and ammonium sulfate has been described. The final product obtained by them is a non-toxic pressor protein and is apparently a globulin. The protein retains its peculiar properties unimpaired

for long periods if kept frozen or if kept in the dry state as a powder under vacuum. This pressor principle is non-dialysable and is positive for all other standard protein tests. A unit has been established. This renin unit has been defined as the minimum amount necessary, when given intravenously over a period of 2 to 5 seconds, to raise the mean arterial pressure of anesthetized dogs an average of 40 mm. mercury above the starting pressure level. It is interesting to know that Swingle's preparation is non-toxic even when injected in doses of 35 mg.

Interesting experiments have been reported by Schoenheimer and co-workers in the field of protein metabolism. Experiments have been devised which offer proof of the ability of rats to utilize small amounts of ammonia for amino acid and creatin formation. They have also studied the biological hippuric acid formation in rats. When glycine preparations containing labeled nitrogen were used it was found that the glycine given with benzoic acid either by mouth or injections is utilized by the hippuric acid formation. However, only part of the administered glycine, even when given in excess, is used for this reaction; the major part is supplied by the animal tissues. Schoenheimer has also found that when a healthy non-growing rat is given the ordinary stock diet, and kept in nitrogen equilibrium, the nitrogen of at least one dietary amino acid, tyrosine, is only partly excreted in the urine, while most of the remainder is deposited in the tissue proteins. An equivalent of protein nitrogen is excreted. Only part of the deposited nitrogen remains attached to the original carbon chain of the tyrosine molecule. A considerable portion of the rest is used for the formation of other nitrogenous compounds, even of such amino acid molecules as were present in abundant amounts in the diet.

Again this reviewer must report that progress in cancer research is slow, although the attack continues to be vigorous. Of outstanding merit is the work of Kogl whose recorded observations suggest that the proteins of malignant tissues are partially racemized. From normal tissues Kogl has been able to isolate after short acid hydrolysis relative good yields of the usual *l*(+)-glutamic acid, whereas the products isolated from ovarian tumors and other mammary carcinomas gave rotatory values which show that they contain anywhere from 15 to 25 per cent of *d*(-)-glutamic acid. This, indeed, is most interesting and opens up a new field of study on the chemistry of malignant cells.

EVERETT S. WALLIS.

BIOLOGICAL SURVEY, BUREAU OF. In the U.S. Department of the Interior, the agency of the Federal Government concerned with the welfare of all forms of the country's resources in vertebrate wildlife, excepting fishes and marine mammals. To study the relations of birds to agriculture, the organization was established in 1885 under the Department of Agriculture, where it grew from sectional to bureau status. On July 1, 1939, in accordance with President Roosevelt's Reorganization Plan No. II, the Biological Survey was transferred to the Department of the Interior, which more than any other branch of the Federal government is concerned with the conservation of the country's natural resources. The Bureau is organized into nine divisions: wildlife research, land acquisition, wildlife refuges, Federal aid in wildlife restoration, game

management, construction and Civilian Conservation Corps operations, predator and rodent control, public relations, and administration.

Outstanding events of the fiscal year 1939 included the beginning of operations under the Federal Aid to Wildlife Restoration Act, which became effective on July 1, 1938. Under this Act Congress annually appropriates moneys to aid the States in conducting projects designed to benefit wildlife. Appropriations may not exceed the annual revenue from the 10 per cent excise tax on sporting arms and ammunition, which totaled almost \$3,000,000 last year. The initial appropriation to the Bureau was \$1,000,000; and for the fiscal year 1940, it was increased to \$1,500,000. The Federal Government pays 75 per cent of the cost of approved projects, while the State pays 25 per cent. At the close of the first year, 42 States had passed the necessary assenting legislation, 1 had a bill pending, and 5 were ineligible. Approvable projects had been submitted by 37 States.

Significant in its promise of future improvement in wildlife management is the establishment on June 3, 1939, of the Patuxent Research Refuge, Md., near the Nation's capital. On this study area, qualified biologists will investigate game and fur-animal management techniques and will train younger Bureau scientists in this work.

During the year 51 national wildlife refuges, with nearly 2,000,000 acres, were added to the Nation-wide network of sanctuaries. The Bureau now administers 266 refuges with an acreage of 13,620,128.

Saving important wildlife areas from needless drainage constituted an important phase of the Bureau's conservation program. Studies were continued in efforts to determine practical means for accomplishing mosquito control without resorting to destructive drainage of valuable wildlife areas.

Other highlights of the Bureau's work included the following: The annual midwinter migratory waterfowl inventory revealed an increase in almost all species of these birds, the total population being estimated at between 55,000,000 and 60,000,000. Nearly 500,000 game and other birds were banded, bringing the total banded since 1920 to more than 3,250,000. Then land-grant colleges maintained co-operative research units and trained graduate students in wildlife management. The second Nation-wide big-game inventory indicated that there are nearly 6,000,000 big-game animals in the country today. Two important studies on the food habits of North American game ducks were published.

Work continued on studies of fur animals in general. During the past year arrangements were completed for including in the decennial census, for the first time, questions pertaining to fur-animal production. Research on reproduction in minks and muskrats yielded important embryological information and facts of practical value, particularly in mink breeding. Wildlife-disease investigators engaged in a large-scale vaccination on fur farms and a study of the relation of duck foods to botulism.

Pest-control activities included studies to suppress water-chestnut, a plant that impedes navigation and lessens the value of an area to waterfowl and fishes. Some 104,000 predatory animals were taken in co-operative campaigns to protect domestic livestock, poultry, and game, while almost 35,500,000 rodent-infested acres were treated

to protect crops, range vegetation, and irrigation and soil-conservation structures.

The Civilian Conservation Corps established 34 camps on 33 wildlife refuges, where the personnel create marshes by impounding water, plant vegetation valuable to wildlife for food and cover, erect fences, and otherwise improve the areas.

Last year more than 1,000,000 migratory waterfowl hunting stamps were sold. This is a good indication of the number of waterfowl hunters. Enforcing Federal game laws are 44 U.S. game management agents and 22 U.S. deputy agents operating in 43 patrol districts.

IRA N. GABRIELSON.

BIRDS. See BIOLOGICAL SURVEY; ZOOLOGY.

BIRMINGHAM-SOUTHERN COLLEGE. A coeducational institution for higher learning in Birmingham, Ala., founded in 1856. The enrollment for the autumn of 1939 was 870 full-time students and 165 part-time students, and for the summer session 379. There are 62 faculty members. The endowment amounts to \$615,519, and the income for the year is \$261,364. There are 47,000 volumes in the library. A new Physical Education Building was to be built at a cost of \$100,000. President, Raymond Ross Paty, A.B., A.M., I.L.D.

BIROBIDJAN, *bě'rō-bī-jān'*. See JEWISH AUTONOMOUS PROVINCE.

BIRTH CONTROL. Birth control in the United States won increasing acceptance during 1939 as a tax-supported public health measure. From clinics financed by private charity, the trend of the movement is toward inclusion in health and welfare departments as an essential part of maternal and child health service. Forty per cent of the medically directed birth control centers of the United States in January, 1940, were supported in whole or in part by public funds, as compared with 18 per cent in January, 1937.

Two State Boards of Health now include contraception in their services. Following the adoption of birth control as a State public-health measure in North Carolina in 1937, South Carolina launched a similar program in 1939. In Minnesota, contraception is part of the medical budget of eight county welfare boards.

Throughout the United States at the end of the year, 162 birth control centers were located in health department quarters. Ninety-six additional centers in hospitals further reflected the trend toward public support. A total of 223 centers were supported in whole or in part by public funds.

Since the establishment of the first medically directed birth control center in the United States in 1923, the number has grown to 553 centers in 42 States, the District of Columbia, and territories. The greater part of these have been established in the last five years, only 150 centers being reported in January, 1935.

Through the doors of the centers passed in 1939 an estimated 75,000 women, who sought and received needed medical service, and some 165,000 others returned for further guidance and aid. Most patients at these centers can pay little or nothing. In addition, more than 15,000 mothers were reached through special rural service in 11 States. Indirectly, through referral to private physicians and through co-operating agencies, the Birth Control Federation of America

made reliable contraceptive advice available to many thousands more.

National Organizations Merge. The movement gained strength by the merger in January, 1939, of two national organizations, the American Birth Control League, of which Dr. Richard N. Pierson was president, with the Birth Control Clinical Research Bureau, directed by Mrs. Margaret Sanger, forming the Birth Control Federation of America, with headquarters at 501 Madison Avenue, New York. Its total membership is 22,000. State member leagues are directing birth control programs in 30 States and the District of Columbia. Three new State groups were organized during 1939 in California, Maryland, and Tennessee.

The officers of the Federation for 1940 are, Honorary Chairman, Margaret Sanger; President, Richard N. Pierson, M.D.; Vice Presidents, Robert L. Dickinson, M.D., Henry Pratt Fairchild, Ph.D., Frederick C. Holden, M.D., Clarence Cook Little, Sc.D., C.-E. A. Winslow, Dr.P.H.; Secretary, Mrs. Mary Woodard Reinhardt; Treasurer, Gilbert Colgate; General Director, Woodbridge E. Morris, M.D. A board of directors of 75 members includes a representative of each affiliated state league.

The Federation's budget for 1939 was \$150,000 derived mainly from contributions, which are tax-exempt. Its program includes organization of State and local leagues and establishment of birth control centers under medical direction; public education to demonstrate the health, economic and eugenic values of scientific birth control; medical education through medical colleges and medical societies and through publications for physicians. This program is carried out through field service and advice to member leagues and centers in problems of organization, public education, clinic administration, and finance.

Public Education. During the year millions of the general public read articles favorable to birth control in newspapers and periodicals. Several large-circulation magazines treated the subject for the first time and received from their subscribers many more letters favoring birth control than opposing it.

Exhibits and films on birth control were shown at some 300 gatherings of the general public and 102 meetings of physicians, including the American Congress on Obstetrics and Gynecology, American Public Health Association, and National Conference of Social Work. Attendance at exhibits conducted by State birth control leagues at State fairs in Minnesota, Michigan, and Illinois demonstrated the interest of the general public in planned parenthood.

Meetings. Principal meetings included the Annual Meeting held in New York City in January, during which the Federation was formed. A feature of the program was a symposium on population problems, which emphasized that the spread of birth control knowledge is essential to a democratic population policy for the United States.

At the National Conference of Social Work, which met in Buffalo, New York, in June, the Federation conducted three sessions on: Birth Control as a Public Health Measure; A Population Policy for the United States; and The Birth Control Clinic as a Community Resource.

The Southern Conference on Tomorrow's Children, held in Atlanta, in November, brought

birth control to the fore dramatically as a means of alleviating some of the South's more distressing ills. It was sponsored by a committee of more than 100 leaders in medicine, social welfare, economics, and community life, who represented 11 Southern States, and by the Birth Control Federation of America. The conference resolved to meet again in November, 1940, and also that conferences of a similar nature be held in each Southern State in the near future.

Legislation. The Federal laws, as construed in recent court decisions, do not prohibit the mailing of contraceptive supplies and information to physicians, or to other persons upon a physician's direction, for medical use. In only one State, Massachusetts, has the statute been construed as prohibiting the dispensing or giving of contraceptives in medical practice. In a case to test the Connecticut law, a lower court in 1939 upheld the right of physicians to give contraceptive advice. Appeal was made to the State Supreme Court, which will hand down a decision early in 1940.

State legislation during 1939 continued to center on placing prescription and sale of contraceptives in the hands of doctors and druggists. Federal legislation in effect Jan. 1, 1940, will require that the formulae of contraceptive jellies, creams, etc., in common with other proprietary articles, be printed on the package in which they are sold.

In Puerto Rico, U.S. District Judge Robert A. Cooper handed down in January, 1939, a decision that contraceptive advice under medical direction is legal. The way was thus cleared for the operation of birth control clinics under the act passed by the Insular Legislature in 1937.

The International Situation. Some of the world's leading biologists called birth control essential to the genetic improvement of mankind in a "Eugenics Manifesto," signed at the Seventh International Conference of Genetics in Edinburgh, Scotland, August, 1939.

In Great Britain, the National Birth Control Association in May, 1939, officially changed its name to the Family Planning Association, which its board believes, "describes more accurately our functions and the increasing scope of our activities." Birth control has been a public health measure there since 1930, when the British Ministry of Health issued the first of a series of memoranda, urging local maternity and child welfare authorities to establish contraceptive clinics.

Stringent laws against birth control and pressure for higher birth rates continued in Germany, Italy, and France. Fathers of large families in Germany and Italy are accorded tax exemptions and family grants, while bachelors pay higher taxes than married men. The recently drafted Code of the French Family provides family grants and government bounties for every child born.

Japan's birth rate has dropped to the lowest level in 10 years, owing to the Sino-Japanese war. The Information Bureau of the War Office has issued a pamphlet denouncing birth control and late marriage and stressing the need for increasing population, as a means of conducting a long-range war successfully. In China, despite the war, two new birth control clinics were opened during the year.

Making birth control knowledge available to all classes is a part of Sweden's democratic population policy. Births are encouraged not through

cash subsidies, but through measures for family security, including free maternity care, nursery schools, and state-subsidized housing.

Russia's population has increased 15.9 per cent since 1926, according to an announcement of the State Planning Commission in June, 1939. The birth rate has risen considerably since Russia abandoned its policy of legalized abortion in 1936. The *Medical Worker* of Moscow, in an article of January, 1939, criticized inferior contraceptive materials manufactured in the Soviet Union and demanded wider education in birth control "as one of the basic measures in the struggle against illegal abortion."

WOODBRIDGE E. MORRIS.

BIRTH CONTROL FEDERATION OF AMERICA. See BIRTH CONTROL.

BIRTHS AND BIRTH RATES. See FRANCE, GERMANY, GREAT BRITAIN, ITALY, JAPAN, and other principal countries under *Area and Population*; *VITAL STATISTICS*; *BIRTH CONTROL*.

BISMARCK ARCHIPELAGO. See NEW GUINEA, TERRITORY OF.

BLACK TOM CLAIMS. See UNITED STATES; *Foreign Affairs*; GERMANY: *History*.

BLIND. See RELIEF; SOCIAL SECURITY BOARD. "BLITZKRIEG." See EUROPEAN WAR.

BLOCKADES. See EUROPEAN WAR.

BOBSLEDDING. See SPORTS.

BODANZKY, bō-dānz'ky, ARTUR. An American orchestral conductor, died in New York, Nov. 23, 1939. Born in Vienna, Dec. 16, 1877, he was educated at the high school and at the Konservatorium there, where he studied the violin, but after hearing Gustav Mahler conduct *Lohengrin*, he decided to become a conductor. His first position was at Budweis in Bohemia in 1900; two years later he became Mahler's assistant at the Imperial Opera House in Vienna. In 1904 he directed the first Paris performance of *Die Fledermaus*. Subsequently he conducted at Berlin and Prague, and in 1909 he became director of the Ducal Opera at Mannheim. In 1914 he was invited to conduct *Parsifal* at Covent Garden, and in the following year he was invited to join the Metropolitan Opera Co., as principal conductor of the German wing.

His New York debut was made on Nov. 17, 1915 as conductor of *Götterdämmerung*. He became one of the outstanding conductors in the history of the Metropolitan, and was its senior conductor and the foremost conductor of Wagner in the United States. In 1929, after 14 years with the Metropolitan, Mr. Bodanzky resigned, but he resumed his post on November 30 with a brilliant performance of *Der Rosenkavalier*. His association with the Metropolitan continued until his death.

During the World War, Mr. Bodanzky became a citizen of the United States, and due to the disfavor in which German music was held, he turned to the study of Italian and French music. In 1916 he became conductor of the American Society of Friends of Music and remained with that organization until its disbandment. From 1919 to 1921 he led the concerts of the National Symphony Orchestra with conspicuous success. After the amalgamation of the latter organization with the Philharmonic Society (1921), he directed several Philharmonic concerts as guest-conductor.

Bodanzky revised the scores of Weber's *Oberon* and *Freischütz* and Beethoven's *Fidelio*, setting all the spoken dialogues to music. He also made an

excellent German translation of the libretto of Mozart's *Don Giovanni* (1911).

BOHEMIA. See CZECHO-SLOVAKIA.

BOILERS. See POWER PLANTS.

BOLIVIA. A republic of South America. Sucre is the seat of the Supreme Court and nominally the capital, but La Paz, the largest city, is the actual seat of the government.

Area and Population. Taking into account the Chaco boundary settlement of 1938 (see 1938 YEAR BOOK, p. 131 f.), Bolivia has an area estimated at 537,792 square miles. The population on Dec. 31, 1937, was estimated at 3,282,755, divided racially as follows: White, 13.08 per cent; mestizo (mixed), 27.51; Indian, 52.34; others, 7.07. Estimated 1936 populations of the chief cities were: La Paz, 200,000; Cochabamba, 52,323; Oruro, 44,826; Potosí, 35,900; Santa Cruz, 31,300; Sucre, 27,508. Spanish is the language of the educated classes. The Indians speak mainly Quechua and Aymara.

Education and Religion. The illiteracy rate, which was 83.5 per cent for that part of the population seven years and over in 1900, remains high. The school enrollment in 1936 was: Elementary, 73,854; secondary, 5522; special schools, 4615; universities, 1482. Roman Catholicism is recognized as the state religion. Public exercise of other forms of worship is guaranteed.

Production. Mining is the chief industry, with tin accounting for some 70 per cent of the value of all exports. Provisional figures for mineral exports in 1938 in metric tons, with the value in pound sterling in parentheses, were: Tin, 25,893 (£4,851,850); silver, 199 (£518,406); wolfram, 1517 (£388,166); antimony, 9448 (£240,261); lead, 13,225 (£202,402); zinc, 10,704 (£150,697); copper, 2883 (£116,539). The output of crude petroleum was about 14,000 metric tons. Agriculture and stock raising are the other chief occupations. Wheat, quinoa, corn, rice, barley, sugarcane, cotton, coca leaves, tobacco, and coffee are the principal crops. Manufacturing is confined largely to alcohol and beverages, foodstuffs, textiles, and clothing.

Foreign Trade. Imports in 1938 totaled 70,558,889 bolivianos (59,234,452 in 1937) and exports 94,829,659 (124,598,852). (Conversions to dollars may be made at the rate of \$0.365 to the boliviano for both 1937 and 1938.) The United States supplied 25.5 per cent of the imports (27.7 in 1937); Germany, 17.9 (13.3); Great Britain, 7.0 (7.9); Japan, 7.0 (4.8). Of the 1938 exports, Britain took 62.5 per cent (59.9 in 1937); Belgium, 21.7 (23.4); United States, 4.6 (7.3). Metals, coca, quinine, and hides are the chief exports, and textiles, wheat, flour, sugar, live animals, machinery, etc., the main imports.

Finance. According to the Central Bank, governmental receipts in 1938 totaled 335,008,024 bolivianos (ordinary, 259,842,743; extraordinary, 75,183,281) and expenditures 330,027,334 bolivianos (ordinary, 263,875,619; extraordinary, 66,151,715). Budget estimates for 1939 placed receipts and expenditures at 300,669,856 bolivianos each. The internal public debt on Dec. 31, 1937 was 377,731,997 bolivianos, while the external debt totaled \$91,568,639 U.S. currency and 838,589 pounds sterling, including accrued interest payments due. No interest or amortization was paid on the foreign debt in 1938. For exchange rate of boliviano, see *History*. The 1940 budget estimates balanced at 627,000,000 bolivianos.

Transportation. In 1938 Bolivia had 1402 miles of railway line in operation, 50 miles under construction, and 498 miles under survey. Combined operating statistics of the nine principal lines in 1938 were: Freight, 1,205,149 metric tons; passengers, 1,204,361; revenues, 70,596,379 bolivianos; expenses, 60,583,108 bolivianos. For new railways under construction in 1939, see *History*. Highways in 1939 aggregated 5788 miles, all dirt surfaced. A new 45-mile road connecting La Paz with Lake Titicaca was opened June 10, 1939. Navigable rivers, 5600 miles. Five steamers ply the waters of Lake Titicaca (12,500 feet high). Air lines link the principal cities and connect with the Pan American Airways and Junkers (German) air networks. Statistics of the domestic Lloyd Aero Boliviano system in 1938 were: Miles flown, 497,651; passengers, 20,907; mail, 79,759 lb.; baggage, 567,139 lb.; freight, 2,375,147 lb.

Government. A new Constitution was promulgated Oct. 30, 1938 (see 1938 YEAR BOOK, p. 96, for main provisions). President at the beginning of 1939, Lieut.-Col. Germán Busch, who became provisional President by a military coup d'état on July 17, 1937, and was sworn in as constitutional President May 29, 1938, following his election by a Constitutional Assembly. Of 103 Deputies and 18 Senators elected to the Constitutional Assembly, 114 were members of the United Socialist Front supporting the Busch regime. The opposition parties all boycotted the election.

HISTORY

The Busch Dictatorship. The constitutional regime established by President Busch in 1938 (see 1938 YEAR BOOK, p. 96) proved of short duration. The Constitutional Assembly had adjourned on Oct. 30, 1938, and was to reassemble as the regular Congress on Aug. 6, 1939. President Busch had given his pledge to forswear "totalitarian ambitions" and follow democratic principles during the intervening period. On February 24 he suspended the state of siege proclaimed after the abortive revolt plot of November, 1938, and amnestied most of the participants. He also sought to calm the rising political unrest by authorizing the election on May 4 of an additional Senator from each of the nine Departments.

The election call spurred the opposition parties (Liberals, Republicans, and Socialist Republicans) to form a united front, renew their agitation against military control of the government and demand non-interference with the voting. Political agitation was stimulated by the increasingly acute economic and financial crisis that was Bolivia's heritage from the disastrous Chaco War of 1932-35. Fearing that his power was endangered, President Busch moved to eliminate threats from both within and without his regime. Two leading personalities within his government—Minister of Government Gabriel Gosalvez and Gen. Carlos Quintanilla, commander-in-chief of the army—were sent to Europe, Gosalvez as Ambassador to the Holy See and Quintanilla on a trip to Germany and Italy. Busch then visited army garrisons throughout the country to secure the support of the officers for his next move.

This came on April 24 in the form of a manifesto in which the President assumed all political and administrative powers, dissolved the Constitutional Assembly, suspended the Constitution, and announced the introduction of "iron discipline and stern readjustment of political and civic morality." His objective, he declared, was to end the rule of

financial privilege and extremist tendencies which had produced "the worst chaos in the history of Bolivia." Once these conditions were ended, he promised to hold elections for a new Congress. While the new regime resembled in many respects the traditional Latin American military dictatorship, it attempted to extend its control over the nation's economic as well as political life.

On April 27 Busch decreed heavy penalties for speculation in foreign exchange, arbitrary increase of prices of prime necessities, and of rent, and crimes against the public treasury and the safety of the State. Among crimes of the latter category were listed strikes, propaganda against the government and nation, and advocacy of political doctrines. The same decree gave the state absolute control of education and labor relations. The governmental services and cabinet were reorganized. Dionisio Foianini entered the cabinet as Minister of Mines and Petroleum.

Exploitation of Minerals. Foianini, instigator of the expropriation by the Bolivian Government in 1937 of Standard Oil properties representing an investment of \$17,000,000, was said to have persuaded Busch that the only way out of Bolivia's financial and economic dilemma was through state exploitation of the republic's oil and other mineral wealth. The way was cleared in part for the carrying out of this programme by the Bolivian Supreme Court's decision of Mar. 9, 1939, rejecting the Standard Oil Company's appeal against the 1937 expropriation decree. The agreements made with Argentina and Brazil in 1938 for the development of Bolivian oil resources (see 1938 YEAR BOOK, p. 97-98) were supplemented by an agreement with Paraguay signed Apr. 21, 1939.

This provided for the construction of a 350-mile oil pipe-line from the Camiri oil district in the eastern foothills of the Andes to the Paraguay River opposite Concepción and for the construction of an oil refinery at Villa Hayes opposite Asunción. Paraguay granted Bolivia a right of way 325 feet wide across the Chaco for the pipe-line and two free zones of 5000 acres each for the terminus of the pipe-line and the refinery, respectively. The refinery was to be completed in 18 months and the Chaco pipe-line within five years. In order to supply Bolivian oil to the Villa Hayes refinery before the Chaco pipe-line was completed, another 35-mile pipe-line was to be built to connect the Bolivian oil fields with the Argentine railway terminus at Tobatirenda near Yacuiba. From there oil could be taken by railway tank cars to Formosa on the Paraguay River and then by barge to Villa Hayes.

The agreement gave Bolivia a monopoly for the refining and supplying of all Paraguay's needs of petroleum products for 30 years and the right to export surplus petroleum without payment of Paraguayan customs duties or taxes of any kind. At the end of 30 years the refinery was to be taken over by the Paraguayan Government at cost less depreciation, but the Bolivian Petroleum Board was to retain ownership of the Chaco pipe-line. Half of the administrative staff and three-quarters of the workers in the Bolivian petroleum enterprises in Paraguay were to be Paraguay citizens. The cost of the two pipe-lines and refinery was estimated at \$15,000,000.

German Barter Deal. Bolivia sought to obtain the completed installation of the refinery and pipe-lines as part of a barter deal with Germany in which Bolivian oil and other minerals would pay for German machinery, equipment and tech-

nical assistance. Minister Foianini announced early in May that the Reich had granted a credit of 4,000,000 marks for the purchase of equipment for the National Petroleum Board. On August 4 a Bolivian-German accord for the exchange of Bolivian minerals for German manufactures was signed in La Paz. After the announcement in August of the discovery of important new wells in the Eastern Bolivian fields, the La Paz Government on September 18 authorized issuance of a loan of 10,000,000 bolivianos by the Central Bank to carry on the work of the Petroleum Board. Meanwhile the outbreak of the European War ended for the time being hope of assistance from Germany.

Progress on Railways. Steady progress was made, however, in constructing the railway network to permit joint Bolivian-Argentine and Bolivian-Brazilian exploitation of the Bolivian oil deposits (see 1938 YEAR BOOK, p. 97). Extension of the Northwestern Railway of Brazil from Porto Esperança to Corumbá on the Bolivian frontier was undertaken. On June 16 bids for construction of the first section (El Carmen-Roboré) of the line linking Corumbá with Santa Cruz de la Sierra, chief city of eastern Bolivia, were opened in La Paz. A decree of June 10 provided for financing the Bolivian share of this project by taxes on beer, alcohol, brandy, and wine. The Brazilian Government appropriated about \$1,500,000 for its share of the cost by the decree-law of Sept. 26, 1939.

Meanwhile the Bolivian Government proceeded with construction of the Sucre-Camiri railway connecting the high Bolivian plateau and its railway network with the eastern lowlands and the refinery constructed in the oil zone by the Standard Oil Company. Engineering studies were made for the railway to be built with Argentine assistance connecting the Argentine railway terminus at Tobatirenda with Camiri and Santa Cruz. Surveys were also in progress for the two other lines called for by the Bolivian-Brazilian treaty of Feb. 25, 1938—the Cochabamba-Santa Cruz railway and the line from Santa Cruz to Puerto Grether on the Ichilo River.

Exchange Expropriation. The most controversial measure introduced by the dictatorship was the decree of June 7, which practically paralyzed the mining industry. It provided that all foreign exchange acquired by exporters of minerals be deposited in the Central Bank and that foreign reserves of the mining companies must be returned to Bolivia within 120 days. It gave the state a monopoly of the purchase and resale of minerals from third parties, nationalized the privately owned Mining Bank, and levied a 30 per cent tax on gross sales of mineral ores by the mining companies. Another decree established closer government control of the mining industry by setting up a national association of medium-sized miners.

These decrees were accompanied by popular demonstrations and speeches by Busch proclaiming the economic emancipation of the nation. They were considered in mining circles as the first step toward nationalization of the mining industry. Bonds of some of the leading Bolivian mining companies slumped as much as 40 per cent. The mine owners, representing for the most part foreign interests, greatly curtailed their operations and made repeated pleas for modification of the decrees. These were summarily rejected by the government. On July 4 Mauricio Hochschild, Jewish head of an important mining and tin-

buying firm, was arrested with a number of his associates for organizing a protest against the decrees.

A series of other decrees sought to relieve the exchange shortage, curb price increases, and strengthen government control of the economic system. On August 3 the Central Bank was completely nationalized, the government taking over all the shares and 20 per cent of the legal and dividend reserves accumulated up to June 30. The Bank was made the sole export agent for Bolivian products to Germany under the commercial accord with the Reich. On August 31 another decree provided for the purchase by the government of all gold mined in the country.

Death of President Busch. These measures, combined with Busch's German connections and various governmental tendencies, increased criticism of the regime as an imitator of European totalitarianism. Bolivia's adhesion to the anti-Comintern pact was predicted. There was growing suspicion abroad and dissension at home. In the middle of May the President exiled a number of opposition leaders to Coati Island in Lake Titicaca and other isolated parts of the republic. Others were forced to leave the country. Nevertheless there were sporadic reports of anti-government conspiracies.

Difficulties also developed within the government. A scheme for the sale of immigration permits to numerous Jewish refugees, uncovered late in May, led to the arrest of several high Bolivian consular officials and the resignation of Foreign Minister Eduardo Diez de Medina. Finance Minister Santiago Shulze resigned when the President rescinded measures he had authorized favorable to the wealthy Patiño mining interests. The new Foreign Minister, Alberto Ostria Gutiérrez, withdrew from the cabinet on August 3 in protest against the nationalization of the Central Bank, and Señor Foianini was appointed to succeed him. With the development of the European crisis, the economic situation seemed to be going from bad to worse.

On August 23, while attending a birthday party at his home, President Busch (q.v.) was killed by a bullet through the temple. The Minister of Propaganda announced that he had committed suicide as a result of overwork. There were widespread rumors that the President had been assassinated and an official inquiry was ordered, which confirmed that death was self-inflicted.

The Provisional Regime. Immediately after Busch's death, General Quintanilla, who had returned from his European trip, assumed the Presidency "by vote of the generals and officers of the La Paz garrison." He announced that the army would exercise governmental powers until elections could be held to restore constitutional government and "normalize the national situation." A new cabinet was sworn in on August 26. Quintanilla stated that he would continue Busch's social program, but took steps to end the dictatorship. On September 22 the censorship was abolished and on October 6 the 1938 Constitution was restored. General elections for a President, Vice President and a complete Congress were convoked for Mar. 7, 1940.

The first candidate for the Presidency to announce himself was Lieut. Gen. Bernardino Bilbao Rioja, commander-in-chief of the army. On October 27 he was expelled from Bolivia by order of Provisional President Quintanilla and the cabinet on the ground that he was conspiring to seize

power through a military coup d'état. Bilbao's expulsion was the signal for an abortive uprising in the Military College at La Paz, led by his brother, Col. Sinforiano Bilbao. On December 12 Gen. Enrique Peñaranda, a Chaco War veteran, resigned as Minister of Defense and accepted the presidential nomination offered him by the Socialist, Republican Socialist, and Liberal parties.

Meanwhile the outbreak of the European war had caused a temporary cessation of tin shipments and aggravated every aspect of the economic crisis. Early in September the government suspended all transactions in foreign exchange to conserve its meagre supply. Merchants raising prices were threatened with severe punishment. On October 1 the government substantially modified the exchange-control legislation of June 7 and July 7 in line with the complaints of the mine owners. This action and the establishment of the Anglo-French convoy system permitted the regular resumption of tin and other mineral exports before the end of October, relieved the foreign exchange shortage, and checked the rapid depreciation of the Bolivian currency. The government's receipts of foreign exchange increased from £72,000 (sterling) in August to £390,000 in October.

A decree of October 21 provided for a 30 to 40 per cent increase in wages and salaries of workers in industry, commerce, mining, and domestic service.

For obituaries of ex-Presidents Eliodoro Villazón and Dr. Juan Bautista Saavedra, who died during 1939, see *NECROLOGY*. Gen. Hans Kundt (q.v.), German commander of the Bolivian army during the first part of the Chaco War, died in Italy.

Foreign Relations. Bolivia's foreign relations during 1939 were marked by growing collaboration with all of her neighbor republics, particularly in economic matters. The Chaco Peace Conference at Buenos Aires (see 1938 *YEAR BOOK*, p. 131 f.) was formally disbanded on January 24. The mixed Bolivian-Paraguay commission organized to mark the boundary fixed by the arbitral award of Oct. 10, 1938, commenced its labors early in May.

The cordial relations established between the two former belligerents were manifested by the Bolivian-Paraguayan treaty of April 21 (see above), the exchange of commercial missions by the two countries, and the presence of a special delegation from Bolivia at the inauguration of President Estigarribia of Paraguay (q.v.). En route to Asunción from the Panama Conference, the Paraguayan Foreign Minister stopped over in La Paz, October 18-22, and concluded four protocols designed to promote economic and cultural relations. They included an agreement on details of the proposed petroleum refinery on the Paraguay River and for establishment of direct Asunción-La Paz air services.

The Bolivian Legations in the Chilean and Mexican capitals were raised to Embassies by reciprocal agreement with those governments. The reiteration of Bolivia's desire for a Pacific outlet made by Foreign Minister Díez de Medina at the Pan American Conference in Lima caused further discussion in Chile and Bolivia in 1939. Bolivian students protested when the new Chilean Ambassador, Benjamin Cohen, in a speech at La Paz characterized the Bolivian port aspirations as "sentimental." Some Chileans, however, endorsed the proposal for cession of Arica to Bolivia, while

the Chilean Senate studied a plan to make Arica a free port.

See *BRAZIL* and *CHILE* under *History*; *INDUSTRIAL CHEMISTRY*; *PAN AMERICANISM*.

BOLLWEEVILS AND BOLLWORM. See *ENTOMOLOGY*, *ECONOMIC*.

BONDS. See *BANKS AND BANKING*; *FINANCIAL REVIEW*.

BONNEVILLE DAM. See *MUNICIPAL OWNERSHIP*.

BOOK PUBLISHING. Book production in the United States showed a decline in 1939—the first since 1933—to judge by number of titles published. Titles issued during the year may be classified as follows: Total: 10,640 in 1939; 11,067 in 1938; 427 or 3.85 per cent decrease. New Books: 9015 in 1939; 9464 in 1938; decrease 449. New Editions: 1625 in 1939; 1603 in 1938; increase 22. Religion: 697 in 1939; 821 in 1938; decrease 124. Fiction: 1547 in 1939; 1663 in 1938; decrease 116. Poetry, Drama: 653 in 1939; 744 in 1938; decrease 91. Juveniles: 949 in 1939; 1041 in 1938; decrease 92. History: 804 in 1939; 857 in 1938; decrease 53.

Classifications showing an increase included Medicine, General Literature, Sociology and Economics, Law; among those showing a decrease were Biography, and Geography and Travel. It might be noted that the decline in fiction titles has been going on for several years. There were 233 crime novels published, 151 by American authors, 82 by English authors, 64 by women.

In 1939, there were 247 firms which published more than five books, as compared with 243 in 1938; and 39 firms published more than half of all books. The Macmillan Company (New York) led with 492 titles. Important new publishing enterprises were in the cheap book field: Pocket-Books with 33 reprints, and Penguin Books in the United States with 109 new and reprint titles.

Characteristic of reading habits in the United States in the year was the popularity of new books dealing with the underdog, or the seamy side of life, or on the muckraking order, like the best-selling Steinbeck's *The Grapes of Wrath*. Notable also was the comparative scarcity of books by European writers, because of war conditions, which added to the literary emphasis on the American scene. The most important non-fiction book was Sandburg's four volume *Lincoln, the War Years*, which with the earlier *Lincoln; The Prairie Years*, in two volumes, would seem to be the definitive life of Lincoln for this generation. (See also *LITERATURE, ENGLISH AND AMERICAN*.)

A new 69-cent edition of Margaret Mitchell's *Gone With the Wind* was published at the time of the release of the motion picture based on the book, bringing total printings of this phenomenal best seller to over 2,500,000.

Best sellers of 1939 in order, as reported by *The Publisher's Weekly*, were:

Fiction. *The Grapes of Wrath*, by John Steinbeck (300,000 copies); *All This and Heaven, Too*, by Rachel Field; *Rebecca*, by Daphne du Maurier; *Wickford Point*, by John P. Marquand; *Escape*, by Ethel Vance; *Disputed Passage*, by Lloyd C. Douglas; *The Yearling*, by Marjorie Kinnan Rawlings; *The Tree of Liberty*, by Elizabeth Page; *The Nazarene*, by Sholem Asch; *Kitty Foyle*, by Christopher Morley.

Non-Fiction. *Days of Our Years*, by Pierre Van Paassen (230,000 copies); *Reaching for the Stars*, by Nora Waln; *Inside Asia*, by John Gunther; *Autobiography with Letters*, by William

Lyon Phelps; *Country Lawyer*, by Bellamy Partidge; *Wind, Sand and Stars*, by Antoine de Saint Exupéry; *Mein Kampf*, by Adolf Hitler; *A Peculiar Treasure*, by Edna Ferber; *Not Peace But a Sword*, by Vincent Sheean; *Listen! the Wind*, by Anne Morrow Lindbergh.

BOOKS. See LITERATURE, ENGLISH AND AMERICAN; foreign literature, as FRENCH LITERATURE; BOOK PUBLISHING; and the bibliographies listed in various topics.

BOOTS AND SHOES. See SHOES.

BORNEO. See BRITISH NORTH BORNEO; BRUNEI; NETHERLANDS INDIES, and SARAWAK.

BOSTON. See WATERWORKS AND WATER PURIFICATION.

BOSTON UNIVERSITY. A non-sectarian institution of higher education in Boston, Mass., founded in 1839 and chartered as Boston University in 1869. The enrollment for the autumn session of 1939 was 11,820, distributed as follows: College of Liberal Arts, 1076; College of Business Administration, 3303; College of Practical Arts and Letters, 587; College of Music, 212; Sargent College of Physical Education, 265; School of Theology, 262; School of Law, 357; School of Medicine, 209; School of Education, 2525; School of Religious and Social Work, 155; Graduate School, 558. The enrollment for the 1939 Summer Sessions was 2020. The University faculty numbers 627. Total income for the year 1938-39, \$2,078,748. The endowment amounted to \$5,142,598. Total volumes in the University libraries, 187,500. The Charles Hayden Memorial, a new million dollar building for the College of Business Administration, was dedicated and put into use at the opening of the fall semester, 1939. President, Daniel L. Marsh, Ph.D.

BOTANY. The interrelations of the main divisions of the study of plant life are well illustrated by many contributions to botanical science during the past year. This is especially evident in taxonomic surveys, involving cytology, genetics, ecology, as well as anatomical and morphological features. Thus, Babcock and Stebbins (*Carnegie Inst. Wash. Pub.* 504) have treated the North American indigenous species of *Crepis* from the standpoint of their morphology, cytogenetics, ecology, and geographical distribution. All of the species occur in the western half of North America except one, *Crepis nana*, which is also found in Labrador and Newfoundland. Two of the species, with 14 as the diploid number of chromosomes, are arctic-alpine forms. One species, *C. runcinata*, is distinctive in its chromosome number of 22, and also in its habitat, being a plant of wet meadows, while the others are typical of arid, well-drained mountain slopes. This species does not hybridize with the others, and has several distinct subspecies or varieties. The remaining nine species show varying chromosome numbers and evidence of hybridization. Several of them contain apomictic races, in which the seed formation occurs with, however, the omission of fertilization.

Mensinkai (*Jour. Genetics* 39: 1) contributed cytogenetic studies in the genus *Allium*. He examined 17 species and found that 11 were diploids, 4 tetraploids, and 2 hexaploids. The chromosome number of 15 species was determined for the first time. Within the genus, evolution is taking place in change in number, change in chromosome structure, and change in the genotype. Meurman and Therman (*Cytologia* 10: 1) have studied the

morphology of the chromosomes in species and hybrids of the genus *Clematis*. Of the 25 species studied, 23 were diploids, with 16 as the number of chromosomes. One species was a tetraploid and one a hexaploid. Among the horticultural forms and varieties of this genus, various types of chromosome combinations were found.

Taxonomy. Along more purely taxonomic lines, several papers have appeared. Seem (*Rhodo* 41: 317) has described 31 North American species of *Crotalaria*. This genus is widespread, with its main center in tropical Africa, where approximately 300 species, out of a total of 400 recorded, are found. Krukoff (*Brittonia* 3: 205) has described 25 American species of the genus *Erythrina*. These plants are of some interest because of the possibility of the occurrence of Curare alkaloids in their tissues. By far the larger number of species are Central and South American. Cutler (*Ann. Mo. Bot. Gard.* 26: 373) has studied the North American species of the genus *Ephedra*, 15 being recognized. This genus is one of three of the unusual family Gnetaceae. Various species are found in the desert regions of North and South America, southern Africa, and parts of Asia. The drug, ephedrine, for centuries has been secured from Asiatic species. Jones (*Jour. Arnold Arbor.* 20: 1) has given a synopsis of the North American species of *Sorbus*, 11 being recognized.

Cytology and Genetics. Goodspeed and Avery (*Jour. Genetics* 38: 381) have studied the trisomic types of *Nicotiana glauca*. The first trisomic was described in *Datura* about 20 years ago. It is a plant in which three chromosomes of 1 type, instead of 2, are found; otherwise the plant is a diploid. The authors grew approximately 9000 plants during the past 10 years, and found 164 primary trisomics of 11 different types. Each of the primary trisomics differs in a large number of characters—cytological, anatomical, and physiological. Certain characters are minute and inconspicuous, while others are large and striking. Upcott (*Jour. Genetics* 39: 79) has investigated the nature of tetraploidy in *Primula kewensis*. The plant is interesting, since it is the first hybrid whose ability to breed true was shown to be the result of the doubling of its chromosome complement. Müntzing (*Hereditas* 25: 387) described the methods of production of rye-wheat amphidiploids and some of their properties. Different strains vary greatly in vigor, fertility, and the regularity of their nuclear division. Gustafsson (*Hereditas* 25: 33) has studied some of the European blackberries from the standpoint of the differences in their polyploidy. Various combinations, such as triploid, tetraploid, or pentaploid, were found. Some American forms were studied, and diploid, triploid, pentaploid, hexaploid, and octaploid forms were noted. Harvey (*Genetics* 24: 437) studied the inheritance of a physiologic character, investigating the heredity differences in the plant nutrition of corn hybrids and also strains of two species of tomatoes. Whaley (*Jour. Hered.* 30: 335) investigated the inheritance of leaf and flower characters in *Tropaeolum* hybrids. He found that the expression of acutely lobed, roundly lobed, and orbicular leaf shapes is controlled by two genes. Leaf color is also controlled by two complementary genes, the presence of both resulting in dark green leaves, the absence of either, in a medium green, and the absence of both, a light green. The intensity of the yellow color, due to yellow plastids, is dependent upon the cumulative action of two

or more genes. Red anthocyanin may accompany the yellow pigments, its presence and intensity depending upon several genes. The number of petals is inherited on a simple basis with the normal five-petaled type being dominant to the simple double type. Wetmore and Delisle (*Amer. Jour. Bot.* 26: 1) studied the genetics and cytology of *Aster novae-angliae* and *A. multiflorus* and their reciprocal hybrids. Under natural conditions, they found a wide range of forms which were evidently hybrids between these two species. Purvis (*Ann. Bot. N.S.* 3:719) studied hybrids between spring and winter Petkus rye. Spring rye differs from the winter in a shorter time required for flowering, and tillers less. Winter rye may be made to take on the appearance and habits of spring rye through vernalisation. When winter rye is crossed with spring rye, the first generation shows the spring habit dominant, while in the second generation, "spring" and "winter" plants occur in approximately the ratio of 3:1. The early and late flowering dates are not inherited in such a simple fashion, but the evidence indicates clearly that date of flowering is inherited independently of the spring and winter habit.

Use of Colchicine in Cytology and Genetics. Colchicine is finding a wide application in producing changes in the chromosome make-up of plants. Levan (*Hereditas* 25:9, 109) has studied the effect of colchicine on meiosis in *Allium*, recording a number of conspicuous effects on the spindle mechanism and chromosomes. He has also used the material on diploid *Petunia* to produce tetraploid and octoploid forms. Two methods of treatment were employed, one, soaking the seed in a water solution of colchicine, and the other, treating seedlings in colchicine dissolved in agar. Tetraploids were produced in greater abundance than octoploids. O'Mara (*Jour. Hered.* 30: 35) made some observations on the immediate effects of colchicine, finding that the treated chromosomes are more accurately measurable than the untreated. Sears (*Jour. Hered.* 30: 38) has made a study of various amphidiploids in species of *Aegilops* which are induced by colchicine. Smith (*Jour. Hered.* 30:291) reported on the induction of polyploidy in *Nicotiana* hybrids; sterile crosses were affected in such a way as to become fertile through the influence of colchicine on the chromosome number. Warmke and Blakeslee (*Jour. Hered.* 30:419), by colchicine treatment, brought about both simple and multiple polyploidy in *Nicotiana*.

Growth Substances. Many investigators have made contributions on the influence of various growth substances on plant life. Great interest has been aroused in the study of the influence of vitamin B₁. Its value in stimulating root growth has found a practical application in hastening root development in cuttings or divisions of plants. Went and White (*Bot. Gaz.* 100:465) carried out experiments on the transport of auxin in the plant tissues. Lindner (*Bot. Gaz.* 100: 500) studied the effects of certain growth substances on the development of buds and roots in horse-radish. Mitchell and Stuart (*Bot. Gaz.* 100: 627) studied the growth and metabolism of soybean cuttings, roots having been formed through the stimulation of growth substances. Nixon and Gardner (*Bot. Gaz.* 100: 868) reported on the effect of certain growth substances on inflorescences of dates. Gardner and Marth (*Bot. Gaz.* 101: 226) investigated the effectiveness of certain growth sub-

stances on the parthenocarp in holly. Gustafson (*Amer. Jour. Bot.* 26: 135) studied the distribution of auxin in fruits and its significance in fruit development. Van Overbeek (*Bot. Gaz.* 101: 450) obtained evidence for auxin production in isolated roots growing in vitro. Robbins and Schmidt (*Amer. Jour. Bot.* 26: 149) carried out further experiments on the growth of excised roots in pure culture. Addicott (*Bot. Gaz.* 100: 836) investigated the relation of vitamin B₁ to the meristematic activity of isolated pea roots, and Cooper (*Bot. Gaz.* 100: 844) determined the influence of vitamins on the germination of pollen grains and fungous spores. Brannon and Bartsch (*Amer. Jour. Bot.* 26: 271) studied growth and cell division in green algae as influenced by growth substances. Goodwin (*Amer. Jour. Bot.* 26: 74) made a comparison of techniques in the determination of three-indole acetic acid. Thimann and Schneider (*Amer. Jour. Bot.* 26: 328) made a comparison between the relative activities of different auxins. Bausor (*Amer. Jour. Bot.* 26: 415) described a new growth substance β -naphthoxyacetic acid. Addicott and Devirian (*Amer. Jour. Bot.* 26: 667) found that nicotinic acid is a second growth factor for excised pea roots. Kaiser and Albaum (*Amer. Jour. Bot.* 26: 749) studied the relation of growth substances to root and shoot growth of an early and late variety of oats.

Mineral Nutrients. Hurd-Karrer (*Plant Physiol.* 14: 9) investigated the antagonism of phosphorus, potassium, and calcium, essential to plants, toward the chemically related toxic elements, arsenic, rubidium, and strontium. Raleigh (*Plant Physiol.* 14: 823) demonstrated the necessity of silicon for the growth of the beet plant. Arnon and Stout (*Plant Physiol.* 14: 371) studied the necessity of minute quantities of copper for plants. Stout and Arnon (*Amer. Jour. Bot.* 26: 144) also described experimental methods for the study of the role of copper, manganese, and zinc in the nutrition of higher plants. Beath, Gilbert, and Eppson (*Amer. Jour. Bot.* 26: 257, 296) gathered together very interesting data on the use of indicator plants in locating seleniferous areas in western United States.

Photoperiodism. Grainger (*Ann. Appl. Biol.* 26: 684) studied the anatomical, floristic, and phenological aspects of the time of flowering of plants, and his studies have a direct bearing upon the general problem of photoperiodism. He found that the emergence of flowers in various plants may be greatly influenced by temperature and other conditions which occur much earlier in the history of the plant. Hamner and Long (*Bot. Gaz.* 101: 81) studied the localization of the photoperiodic perception in *Helianthus tuberosus*. Parker and Borthwick (*Bot. Gaz.* 101: 145) studied the effect of variation in temperature during photoperiodic induction, and also the effect of the photoperiod on the development and metabolism of the soybean (*Bot. Gaz.* 100: 651). Long (*Bot. Gaz.* 101: 168) determined the influence of various environmental factors on photoperiodic induction.

Ecology. Pool (*Bull. Torrey Bot. Club* 66: 457) has recorded some of the more important effects of drought on vegetation in parts of Nebraska. The period of dry years from 1933 to 1938 has seen very drastic effects on the trees, shrubs, and annual plants. Various factors entered into the resistance of the plants to drought. It may be noted that the Hackberry has with-

stood the drought conditions best of any of the trees, Honey Locust and Red Cedar also being successful. The grass in the lawns and parks has largely been replaced by a weedy annual flora. Robertson (*Ecol. Monog.* 9:431) has made a study of the true-prairie vegetation after three years of extreme drought, recording remarkable changes. Ramaley (*Ecol. Monog.* 9:1) has given a detailed report on the sand-hill vegetation of northeastern Colorado, describing the various types of soil and plant communities, and their relation to various ecologic factors. Tansley, *The British Islands and Their Vegetation* (930 p., University Press; Macmillan Co.) has given a comprehensive account of the British vegetation from an ecological standpoint. He discusses the history, distribution, nature, and classification of the vegetation of the British Islands from the standpoint of environment. The flora of characteristic areas, such as woodland and grassland, is fully described.

Poisonous Plants. Muenscher, *Poisonous Plants of The United States* (Macmillan Co.), has published extensive information on the subject. About 400 species of plants are included, of which about 100 are listed as causing dermatitis. A few species are reported to cause hydrocyanic acid poisoning, and some contain excess quantities of selenium in certain areas of the Rocky Mountain region of the United States.

GEORGE M. REED.

BOULDER (HOOVER) DAM. See ELECTRICAL MACHINERY; RECLAMATION, OFFICE OF.

BOUNDARY DISPUTES. See ARGENTINA, CZECHO-SLOVAKIA, ECUADOR, HONDURAS, HUNGARY, LITHUANIA, MANCHOUKUO, MONGOLIA, NICARAGUA, PARAGUAY, and POLAND under *History*.

BOWDOIN COLLEGE. An institution of higher education for men in Brunswick, Me., founded in 1794. The enrollment for the autumn session of 1939 was 649. There were 58 faculty members and four Teaching Fellows. The productive funds of the college amounted to \$8,341,186, and the income for 1937-38 was \$591,484. The library contained more than 178,000 volumes. President, Kenneth Charles Morton Sills, LL.D.

BOWLING. See SPORTS.

BOXING. See SPORTS.

BOYS' CLUBS OF AMERICA, INC. A national organization formed in 1906, with headquarters at 381 Fourth Ave., New York City. Membership in a Boys' Club is open to boys of all races and creeds from the age of 8 to 18. Through interesting boys in supervised leisure-time activity, Boys' Clubs have an opportunity to do character formation work of distinct value. They specialize in service to the underprivileged boy. Latest statistics give a federation of 351 Boys' Clubs in 194 cities in 37 States, with an enrollment of 300,000 boys. The Boys' Club Federation of Canada, with 21 Boys' Clubs, is affiliated with Boys' Clubs of America.

The officers in 1939 were: President, William Edwin Hall; chairman of the Board, Herbert Clark Hoover; secretary, William Ziegler, Jr.; treasurer, Albert H. Wiggin, and executive director, Sanford Bates.

BOY SCOUTS OF AMERICA. An organization incorporated in 1910, and chartered by Congress in 1916, to develop the character of boys and train them for the duties of adult life by influence brought to bear in their work and play. Each boy,

on joining the organization, takes the Scout Promise to keep himself "physically strong, mentally awake, and morally straight." The movement is nonsectarian and without military or political connection.

The membership as of Sept. 30, 1939, numbered 1,340,950; 857,453 were Scouts, 146,451 Cubs, and 303,872 Adult Leaders. There were 12 regional districts subdivided into 535 Local Councils.

The official magazine for boys is *Boys' Life*, and for Scout Leaders *Scouting*. The National Officers in 1938 were: President, Walter W. Head; Treasurer, Lewis Gawtry; National Scout Commissioner, Daniel Carter Beard; Chief Scout Executive, James E. West; Deputy Chief Scout Executive, George J. Fisher. Headquarters of the National Council are at 2 Park Avenue, New York City.

BRAZIL. A republic of South America, comprising 20 States, the Federal District, and one Territory. Capital, Rio de Janeiro.

Area and Population. Area, 3,286,170 square miles; population, estimated at 44,115,825 on Dec. 31, 1938 (30,635,605 at 1920 census). During the period 1820-1937 a total of 4,603,414 immigrants settled in Brazil, of whom 32.6 per cent were Italians, 30.3 Portuguese, 12.9 Spanish, 4.9 German, and 3.9 per cent Japanese. There are strong infusions of Negro and Indian blood in the northern States. Estimated populations of the chief cities in 1937 were: Rio de Janeiro, 1,801,784; São Paulo, 1,217,330; Recife (Pernambuco), 510,102; São Salvador (Bahia), 363,726 (1935); Porto Alegre, 352,068; Belem (Para), 303,740. Portuguese is the official and principal language, but Italian and German are widely used.

Defense. Military training is compulsory for all males from 21 to 45 years of age, the first year in the ranks and the rest in the reserve. The army's peace strength in 1938 was 6548 officers and 72,525 men; air force, 3500. The navy consists of 2 battleships and 3 cruisers, all laid down in 1907 but extensively refitted; 8 or more destroyers, 4 submarines, and 2 river monitors.

Education and Religion. About 70 per cent of the adult inhabitants are illiterate. The total school enrollment in 1935 was 2,574,802. Under the decree of Nov. 18, 1938, a National Commission of Primary Education was established to organize a nation-wide campaign against illiteracy, and in general to reorganize the primary education system. Roman Catholicism is the predominant religion.

Production. Agriculture, stock-raising, and manufacturing are the chief occupations. Brazil ranks first in the world in production of coffee, second in cacao, and third in sugar and tobacco. Coffee accounted for 45 per cent of the value of all exports in 1938. Production of the chief crops (in metric tons) was: Coffee, 140,000 in 1938-39; cacao, 128,000 in 1937-38; sugar, 120,000 in 1938-39; tobacco, 93,400 in 1936-37; wheat, 150,000 in 1936-37; corn, 6,625,500 in 1936-37; rice, 1,250,200 in 1936-37; cotton-seed, 948,000 in 1938-39; cotton, 407,000 in 1938-39. The 1937 wool clip was 18,000 metric tons. Production of inspected meat in 1936 was (in metric tons): Beef and veal, 775,500; mutton and goat, 9100; pork, 180,000.

Output of the leading mineral and metallurgical products in 1937 was (in metric tons): Coal, 763,000; salt, 707,000; manganese ore (metal content), 65,000 (exports in 1938); iron ore (metal content), 220,000; pig iron and ferroalloys, 98,000; steel ingots and castings, 76,000; gold, excluding alluvial, 4534 kilograms. Diamonds, monazite,

chrome and other minerals are produced. The forests yield hardwoods, rubber, carnauba wax, oil seeds. Cotton weaving is the chief manufacturing industry.

Foreign Trade. Imports in 1938 totaled 5,195,570,000 milreis (5,314,551,000 in 1937); exports, 5,096,890,000 (5,092,060,000). Values of leading 1938 exports were: Coffee, 2,296,110,000 milreis; raw cotton, 929,856,000 milreis; cacao, 212,996,000 milreis; hides and skins, 208,959,000 milreis; oranges, 112,472,000 milreis; carnauba wax, 101,016,000 milreis. Machinery and apparatus, wheat, iron and steel manufactures, vehicles and parts, coal and coke, automobiles and gasoline were leading imports, in order of importance. The United States in 1938 purchased 34.3 per cent of Brazil's exports (36.3 in 1937); Germany, 19.1 (17.1); Great Britain, 8.8 (9.5). Of the imports, Germany supplied 25 per cent (23.9 in 1937); United States, 24.2 (23.1); Argentina, 11.8 (13.9); Great Britain, 10.4 (12.1). See **IMPORTS AND EXPORTS**.

Finance. Current budgetary revenues in 1938 were 3,880,000,000 milreis and current expenditures 4,735,000,000 milreis. With the aid of credits of 1,542,000,000 milreis and other income, Federal accounts were balanced at 5,840,000,000 milreis. The 1939 budget estimates placed revenues at 4,071,000,000 and expenditures at 4,065,000,000 milreis, as compared with 1940 estimates of 4,209,000,000 and 4,422,000,000 milreis, respectively. The foreign debt on Dec. 31, 1938, was distributed as follows: £104,188,400; 273,634,212 French paper francs; 229,185,500 gold francs; \$168,771,745. The internal debt was: Funded, 4,247,786,000 milreis; floating, 2,830,364,000 milreis. The milreis exchanged at \$0.0623 in 1937 and \$0.0568 in 1938 at the free rate.

Transportation. At the beginning of 1939 Brazil had 21,313 miles of railways (317 miles electrified); 119,683 miles of highways (see **ROADS AND STREETS**); and air lines connecting the leading Brazilian cities with one another and with the chief centers of the Americas and Europe. Improvements and extensions of a number of Brazilian railways were under way in 1939 and work was commenced on the important line connecting the Brazilian railway network with Santa Cruz, metropolis of eastern Bolivia (see **BOLIVIA** under *History*). Highway projects under construction in 1939 included a new Santos-São Paulo road, the last stretch of the Rio de Janeiro-Porto Alegre road, and a highway network in Rio Grande do Sul opening up a rich agricultural region. Statistics of the military air-mail service for 1938 were: Lines, 14; length, 9269 miles; miles flown, 1,033,642; mail carried, 106,066 lb.

Government. Under the Constitution of Nov. 10, 1937, Brazil is an "authoritarian" state (see 1937 **YEAR BOOK**, p. 102) ruled by President Getúlio Vargas. Vargas became provisional President on Nov. 3, 1930, after leading a successful military revolt. Under the Constitution promulgated July 16, 1934, he was elected constitutional President the following day for a four-year term. The 1937 Constitution extended his term for six years from 1938. For developments in 1939, see *History*.

HISTORY

Brazilian internal affairs and external relations during 1939 pursued the trend recorded during the preceding year (see 1938 **YEAR BOOK**, p. 101 f.). President Vargas continued to rule

through a personal dictatorship without establishing the governmental institutions called for under the 1937 Constitution or holding the promised plebiscite to secure popular ratification of his regime. He nevertheless retained wide popular support by pushing ahead with a nationalistically inspired program of social welfare, economic development with the aid of foreign and Brazilian capital, and close co-operation with the United States—the policy vigorously espoused by Foreign Minister Oswaldo Aranha. He also strengthened the national defenses, took steps to end the Nazi agitation among the German minority, and sought by collaboration with the other American republics to cushion the shock of the European war to the national economy.

Political Developments. Brazil remained relatively free of the political agitation and disturbances of previous years. Plínio Salgado, leader of the outlawed pro-Fascist *Integralistas* who staged the abortive revolt of May 11, 1938, was arrested in his hideout in São Paulo on Jan. 26, 1939. On May 16 Salgado issued a manifesto asking his "million-odd former followers" to support the Vargas regime. Minister of Justice Francisco Campos then announced that Salgado was free, but on May 29 he was again arrested and on June 22 was deported on a German steamer bound for Lisbon. On June 13 Rio de Janeiro police balked a plot to free the Leftist leader, Luis Carlos Prestes, who was serving a 16-year prison term for his part in the 1935 Leftist revolt. On December 9 the police announced the arrest of 100 persons and the crushing of an alleged Communist plot to create unrest in the army and among government employees and other workers. A Department of Press and Propaganda was established December 27 to organize national propaganda and extend the censorship.

Brazilianization. The measures inaugurated in 1938 to counteract Nazi domination of the German population in southern Brazil, as well as Italian and Japanese nationalist propaganda among their Brazilian minorities, were extended during 1939. Steps were also taken to break up the concentrations of foreign immigrants in colonies where they remained out of contact with Brazilian customs, culture and political institutions. The artillery regiment stationed in 1938 at Blumenau, the principal German center in the State of Santa Catharina, was reinforced in 1939 by an infantry battalion composed of Portuguese-speaking recruits from northern Brazil. Conscripts called to the colors in southern Brazil were sent to Rio de Janeiro and other distant points for their year of military training.

The government sought to direct a stream of Portuguese and North American immigration into the largely German-populated districts of southern Brazil by free grants of land and relaxation of immigration restrictions. On May 3 the Brazilian military commander in Santa Catharina prohibited the use of German and other foreign languages in public meetings, church services, radio broadcasts and in the instruction of children. The 1938 decree requiring the use of Portuguese in all former foreign-language schools had already led to the closing of many German schools. On June 24 President Vargas lowered the immigration bars to permit immigration of 3000 German Catholics of Jewish descent from German concentration camps into southern Brazil.

A decree of June 28 authorized the expulsion at the President's discretion of any foreigner be-

littling Brazil and her institutions "through thoughts, actions or practice." A Japanese newspaper publisher at São Paulo was the first to be deported under this decree. On July 19 another decree provided that existing foreign-language periodicals could import paper duty free and that new publications could be established only if they were printed in both Portuguese and the foreign language. A decree of August 25 tightened government control over Brazilian-born children of foreigners and prohibited the grouping of foreigners of a single nationality in Brazilian colonies. On August 29 the government decreed that all schools must be directed by Brazilians, that military conscripts might speak only Portuguese, and that Brazilian-born children under 18 could not be sent abroad for their education unless accompanied by their parents or guardians.

These measures met with growing opposition among the German-speaking minority. Some 3000 Germans returned to the Reich before the outbreak of the European war rather than accept Brazilianization. A number of other pro-Nazi leaders were expelled. At the end of October it was reported that a series of clashes had taken place at Blumenau between civilians and soldiers.

Economic and Social Measures. A five-year plan for the development of basic industries, public works and national defense was launched on January 19. The total cost of the plan was estimated at three billion milreis (about \$150,000,000) and a special credit of 600,000,000 milreis (about \$30,000,000) covering 1939 was distributed as follows (in milreis): National Petroleum Council, 15,000,000; Ministry of War, 50,000,000; Navy, 30,000,000; Transportation and Public Works, 105,000,000; Agriculture, 30,000,000; Education and Health, 30,000,000; Justice and Internal Affairs, 15,000,000; Finances, 325,000,000.

An apparent step toward nationalization of insurance was seen in the decree-law of April 3 establishing the Brazilian Reinsurance Institute as a legal entity in charge of all underwriting in Brazil. All insurance issued by domestic and foreign companies operating in Brazil, in excess of a certain limit, was made subject to reinsurance by the Institute. Beginning July 1, 1940, all commercial and industrial enterprises having real or personal property of 500 contos or more were required to take out fire and transportation insurance in Brazil. The Institute was to be administered by a chairman and six members, of whom the chairman and three members were Presidential appointees.

On May Day President Vargas created a labor tribunal with jurisdiction over issues between workers and employers. On November 10, second anniversary of the dictatorial coup, the President created a national commission for the protection of parents with numerous children. The same day he appointed Federal delegates from all of the States to work out the programme for a national conference on the co-ordination and improvement of economic and administrative affairs, scheduled for 1940.

The discovery of oil in the State of Bahia in January spurred the nationalization of the petroleum industry. A National Petroleum Council, monopolizing the distribution of petroleum products, was created and a contract was signed with a United States firm for the first of several gasoline refining plants. Sizable oil supplies were purchased by the Petroleum Council from the Mexican Government for sale in competition with

established United States and British companies, and drilling machinery was brought from the United States to extend the search for oil in Brazil.

Most important were the steps taken for the development of Brazilian transportation systems and basic industries with capital and loans raised in the United States. United States Steel studied proposals for establishment of a \$30,000,000 steel industry in collaboration with the Brazilian Government and private Brazilian capital. On September 27 the government closed a deal with United States companies for 22,500 tons of rails costing \$1,900,000 and for 14 ships costing \$3,500,000. Both deals called for 35 per cent cash payment in dollars by the Bank of Brazil and 65 per cent credit by the Export-Import Bank of Washington at 5 per cent interest. More deals were under negotiation on a similar basis. United States business interests expressed willingness to advance long-term credits amounting to \$50,000,000 for Brazilian transportation and industrial enterprises.

Accords with United States. These private credits to the Brazilian Government were made possible as a result of a series of economic and financial accords signed by Foreign Minister Aranha and Secretary of State Hull at Washington on March 9. The accords were summarized by W. T. Stone of the Foreign Policy Association as follows:

1. The Export-Import Bank undertakes to establish acceptance credits for the Bank of Brazil to assist the Brazilian government in lifting restrictions on foreign exchange. These credits, amounting to \$19,200,000, will be repayable in installments over a period of two years. The Export-Import Bank further agrees to co-operate with American manufacturers and exporters in extending long-term credits to facilitate the purchase of American products needed by Brazil to develop its transportation facilities and industrial capacity.
2. The United States Treasury agrees (subject to the approval of Congress) to provide up to \$50,000,000 in gold to the Brazilian government for the establishment of a Central Reserve Bank, repayment to be made from Brazil's future gold production. President Roosevelt will present to Congress a request for the necessary authorization to carry out this loan.
3. The United States further agrees to maintain a financial attaché at its Embassy in Brazil, and to press for legislation authorizing the loan of government experts to assist Brazil in developing non-competitive agricultural products for which a market may exist in this country.
4. In return, the Brazilian government agrees to issue a decree freeing the foreign exchange market for commercial transactions, thus assuring funds for the payment of imports from the United States.
5. Brazil undertakes to resume interest and amortization payments on its dollar bond indebtedness, beginning July 1, 1939. The terms of a "transitional arrangement," covering payments on national, state and municipal dollar bonds amounting to \$357,000,000, will be discussed with the Foreign Bondholders Protective Council, Inc., of New York.
6. The Brazilian government proposes to guarantee American investors' treatment equal to that now or hereafter accorded its own nationals.

Most of these agreements were carried into effect before the end of the year. Contrary to expectations, Brazil made only a token payment on her dollar loans on July 1. Negotiations for the resumption of payments on the Brazilian foreign debts were opened with United States, British and French bondholders late in August but no agreement on terms was reached.

The Brazilian-United States economic accords were followed by events demonstrating closer collaboration in the military and political spheres. After Major Gen. Pedro Aurelio Góes Monteiro, Brazilian Chief of Staff, had accepted invitations to visit Germany and other European countries, a United States military mission headed by Brig.

Gen. George C. Marshall, Chief of Staff of the U.S. Army, arrived at Rio de Janeiro on May 25 to invite General Góes Monteiro to visit the United States. They were enthusiastically received and taken on a tour of inspection of defense establishments in Rio de Janeiro, São Paulo, Santos, Curitiba, Porto Alegre, Bello Horizonte, and Recife. Accompanied by a Brazilian mission under General Góes Monteiro, the North American mission sailed for the United States on the cruiser *Nashville*, June 7. The visitors were feted at Washington and taken on a two weeks' air tour of military and air bases throughout the United States. The Brazilian mission was returned to Rio de Janeiro by air in July. On August 29 General Góes Monteiro announced the indefinite postponement of his projected visit to Europe in view of the military crisis. Five "flying fortresses" of the U.S. Army Air Corps arrived at Rio de Janeiro on November 15 to take part in the 50th anniversary celebration of the republic.

Relations with Germany. These new Brazilian-United States ties were Washington's answer to increasing German commercial and political penetration in Brazil, based largely upon the German barter system. Despite the break in German-Brazilian diplomatic relations in 1938 (see 1938 YEAR BOOK, p. 103) further Brazilian orders for military equipment were placed in Germany early in 1939. In June the two governments appointed new Ambassadors to replace those recalled in 1938. The measures of the Vargas Government against Nazi activities in southern Brazil aroused anger in the Reich, but the Berlin authorities did not allow that to hinder their aggressive drive for Brazilian trade and for a share in the development of Brazilian resources and transportation facilities. But with the outbreak of the European war, the Germans were forced to suspend their air service to South America and their trade with Brazil was for the most part captured by the United States as a result of the Allied blockade.

Neutrality Policy. The Brazilian Government, while apparently sympathetic to the Allies, proclaimed a policy of strict neutrality toward the European conflict. The press, army officers, and even the general public in some of the southern districts were ordered to avoid partisan discussion of the war. Immediate steps were taken to curb profiteering and a National Economic Defense Council was established to protect the economic interests of the country. As in 1914-18, the European war proved a distinct stimulus to domestic manufacturing.

Brazil also joined actively in the measures taken at the Panama Conference of American Foreign Ministers and elsewhere to carry into effect the program of inter-American solidarity developed at the Lima Conference in 1938. In September an Argentine military mission was welcomed on a visit to Brazil and a co-ordinated naval patrol of territorial waters was organized by Argentina, Brazil, and Uruguay.

Other Inter-American Relations. A treaty designed to promote Brazilian-Paraguayan trade, through construction of a railway from Rio de Janeiro to Asunción and other measures, was signed June 25. A month later an important Brazilian-Uruguayan trade treaty providing for better exchange facilities and minimum tariffs was signed. About the same time an agreement was reached with Chile for the exchange of Brazilian sugar for Chilean nitrates. Also see ARGENTINA,

BOLIVIA, PARAGUAY, and URUGUAY under *History; FAIRS AND EXPOSITIONS; INDUSTRIAL CHEMISTRY; MILITARY PROGRESS; PAN AMERICANISM; PAN AMERICAN UNION.*

BREMEN. German liner. See EUROPEAN WAR under *The War at Sea; SHIPPING.*

BREMEN, STATE OF. See GERMANY.

BRETHREN, CHURCH OF THE (CONSERVATIVE DUNKERS). A church established in 1719 at Germantown, Pa., the largest branch of the denomination formerly known as the German Baptist Brethren or Dunkers. Headquarters, Elgin, Ill. Other churches of the group are the Brethren Church (Progressive Dunkers) and the Church of God (New Dunkers). See RELIGIOUS ORGANIZATIONS.

BREWER, GEORGE EMERSON. An American surgeon, died in New York, Dec. 24, 1939. Born in Westfield, N. Y., July 28, 1861, he was educated at Hamilton College (A.B., 1881; A.M., 1884; LL.D., 1916) and at Harvard University Medical School (M.D., 1885). He then worked in hospitals in Boston, Washington, and Baltimore, and in 1887 came to New York where he continued in practice until 1927 when he retired. Thereafter he did research work in anthropology and was a research associate in Somatic Anthropology at the American Museum of Natural History, New York.

In 1892 Dr. Brewer became associated with the College of Physicians and Surgeons, Columbia University, and was successively instructor in surgery (1900-03), clinical lecturer (1903-04), professor of clinical surgery (1904-13), professor of surgery (1913-17). He then resigned to do War Work and was appointed professor emeritus. He saw war service with the medical corps and directed U.S.A. Base Hospital No. 2 (No. 1 General Hospital, B.E.F.) at Étretat, France, and subsequently became chief surgical consultant to the 1st Corps of the 1st Army, A.E.F.

One of America's outstanding surgeons and a recognized authority on cancer, Dr. Brewer was consulting surgeon to many New York hospitals, including New York City Hospital with which he was associated from 1889 and where he made extensive studies of wound infection and surgical technique; Roosevelt Hospital (1901-13), and Presbyterian Hospital after 1913.

A Fellow of the American College of Surgeons, he had served as president of its predecessor body in 1913, as a founder and first president of the Society of Clinical Surgery, and was president of the American Surgical Association in 1919, and also held membership in leading American and foreign medical organizations. In 1929 Columbia University gave him the degree of Sc.D. Dr. Brewer was the author of *Text Book on Surgery and Surgical Diagnosis*.

BRIDGES. Although no new records were established, the year 1939 was an active one in bridge engineering. Several important bridges were opened and a number of others were under construction. At the present time, with bridge activity largely confined to projects of the Highway Era, State highway departments have their own bridge departments and design all such bridges, excepting only those of notable size or unusual type. On these latter special problems, the several consulting offices in the country are usually called in and it is only such works that receive comment in the technical press. The great bulk of bridge building, the smaller bridges of current practice, are thus seldom noted. It is also

clear that subsidies by the Federal Government have constituted a decidedly major factor in the building of all types of highway bridges in recent years, particularly the larger ventures. There will undoubtedly be need for more bridges in the future, but it seems doubtful if the present activity will be maintained in the face of probable reduced Federal support.

Among the bridges opened during the year first honors should undoubtedly go to the Bronx-Whitestone suspension, which, because of its strategic position as regards the New York World's Fair, was rushed to completion and opened on April 29. Its 2300 ft. span, without stiffening truss and with graceful towers, makes it one of the most slender and beautiful of recent suspensions. See ARCHITECTURE.

On September 23 the cantilever span over the Mississippi River at La Crosse, Wis., was dedicated. On October 6 the Main Ave. Viaduct in Cleveland was opened—another high level crossing over Cuyahoga River, with a grid floor system, and especially notable because of a 271 ft. plate-girder span in its eastern approach, the longest span of this type in the United States. In November, a continuous truss bridge, with spans of 240, 420, and 240 ft., was opened by the Alabama Bridge Commission. It crosses the Tennessee River between Florence and Sheffield, Ala. Early in December another notable continuous truss span, two openings totaling 840 ft., crossing the Missouri River, was dedicated at Brownsville, Neb. This bridge is an important link on the main Chicago-Denver highway.

Also of interest to bridge builders have been the efforts of the Golden Gate Bridge officials at San Francisco to increase revenue by encouraging greater traffic through decreased tolls. These have been cut from 50 to 40 cents and may be reduced to 35. Traffic has increased 22 and revenue 19 per cent—in part due to closing a competing ferry—but revenue still falls behind the total required to meet expenses.

As the year came to a close a new highway bridge over the Ohio River at Owensboro, Ky., was rapidly nearing completion. With main spans of 278, 750, 629, and 343 ft. and costing \$2,300,000, this bridge is typical of the scale and scope of the many major constructions of the present day.

Pontoon Bridges. Although long used for temporary crossings, particularly in military operations, pontoon bridges have suddenly sprung into importance with the construction of two notable bridges of this type, one over Lake Washington in our own Northwest and the other over the Golden Horn at Istanbul, Turkey. These are unique pioneer works of their kind and their life history will be followed with interest.

Contract was awarded at about $3\frac{1}{4}$ million dollars for the 6551 ft. crossing over Lake Washington early in the year. Approaches will cost another $1\frac{1}{2}$ million. Rapid progress has been made and over two-thirds of the 25 pontoons forming the crossing have been placed in position and anchored. A unique draw span of 200 ft. is provided. The pontoons are of reinforced concrete, 59 ft. wide, built in cellular form with 8 in. walls and varying in length from 117 to 378 ft. It is to be completed by July 1, 1940, again demonstrating the remarkable speed of modern American construction.

The Golden Horn pontoon is a much smaller experiment, 1500 ft. long, but provides a 52 ft. roadway with two 15 ft. sidewalks. The 24 pon-

toons are of steel box construction, each 30 by 82 ft., and a movable section of 4 pontoons is provided in the center. It is interesting to note that the Persian host crossed the Bosphorus some two thousand years ago to attack Greece over a platform suspended by ropes between two lines of anchored boats.

In both cases deep water—100 to 200 ft.—over a deep layer of unsatisfactory mud bottom, made the construction of piers almost impossible or, at least, prohibitive in cost, and thus dictated the use of pontoon construction. The relatively short span at the Golden Horn, however, would normally indicate the possibility of using a suspension type.

Suspension Bridges. The largest span of this type now under construction is the Tacoma Narrows bridge with a span of 2800 ft. The cables of this bridge are only 17 in. in diameter and the construction is so light that the problem of transverse deflection due to wind and of undulations in the floor under a quartering wind become of major importance. Difficulties of this type have been experienced in some of the more recent light highway constructions and recall the very often fatal experiences of earlier pioneer suspension bridge builders. Apparently the cable can be stiffened in its action by reducing the sag, and dampening devices have been used to prevent, or minimize, undulations of the floor. The trend is toward the omission of stiffening trusses, which are not needed for load distribution under highway use in the longer spans, and this omission has materially reduced the stiffness of such bridges under heavy wind loads.

One of the largest suspension bridges outside the United States was completed in May in Southern Rhodesia. Crossing the Zambesi River, the Beit bridge has a span of 1050 ft.

An interesting failure on November 12 of a small span (450 ft.) suspension, built in 1926 over the Rio Grande between Hidalgo and Reynosa, Mex., called attention to the probable corrosion, possibly due to electrolysis, of bridge cables deep in the anchorage masonry where it would not be noted in an ordinary inspection. A temporary wood pontoon bridge was rapidly put in place to supply this rather isolated crossing pending the erection of a new structure.

Cantilevers. Steel erection began in May for a new bridge over the Mississippi River just above Baton Rouge, La. (See FOUNDATIONS, 1938 YEAR BOOK.) This combined railroad and highway bridge will have two channel spans of 588 ft. each with a central anchor span of 650 ft. Another Mississippi River bridge of the same type is under construction at Greenville, Miss. This structure, with a main span of 740 ft. and two side spans of 640 ft. each, will cost about $4\frac{1}{2}$ million dollars.

Another interesting cantilever is the 600 ft. main span with long approaches (see FOUNDATIONS) which will cross Narraganset Bay at Jamestown, R. I. Although this bridge displaces but one of two important ferries, it is estimated that the expected volume of traffic on this main route will carry the cost of the work.

Concrete Arches. The collapse on August 31 of the timber lattice arch, which was to have formed the centering for a single span reinforced concrete arch over the Angerman River between the villages of Lunde and Sando in Sweden, resulted in a loss of 18 lives and brought to a temporary end, at least, the construction of what was to have been the longest concrete arch span in the world—866 ft. When we recall the present record

spans—Plougastel, Brest, France, 590 and Traneberg, Stockholm, 593 ft.—the daring of this project is obvious.

A recently completed twin-cell reinforced concrete arch across the Farsund in Finland, while not a record span, is well up among the greatest spans of this type in the world, 426 ft.

Girders. Note has been made of the 271 ft. record plate girder at Cleveland. An unusual bridge of this type has been under construction in the Appalachian Scenic Highway near Tallulah Falls near Clarkesville, Ga. It is an extremely high structure with hollow, concrete piers and with a continuous girder of 220 ft. center span.

Recent reports indicate that the famous Hawkesbury Bridge, built by American engineers in New South Wales, Australia, in 1889, and remarkable at the time for the great depth of its foundations, must shortly be replaced. The six 410 ft. truss spans are no longer adequate for modern loads and some of the piers have cracked, apparently because of ineffective design or poor maintenance of the expansion bearings at the ends of the trusses.

JAMES K. FINCH.

BRIDGES CASE. Federal proceedings for determining whether to deport Harry B. Bridges were held at San Francisco (July 10 to September 14) before James M. Landis, serving as special examiner for the Department of Labor. The case had both political and social significance: it brought to a focus the sentiment and exertions for and against the expulsion from the United States of one of the most successful and powerful leaders of labor in the country, a man regarded by his opponents as one of the land's most subversive radicals, but whom the C.I.O. had taken into its organization with his thousands of followers among the waterfront employees of the Pacific coast.

Bridges, a native of Australia, entered the United States in 1920. He was reported to have applied for naturalization in 1920 and again in 1928, but to have failed to complete naturalization under each application. In 1934, the year of a violent strike of waterfront and maritime labor in the ports of the Pacific coast, Bridges was denounced as a Communist, and there began an effort to have him deported as a subversive alien, under Federal law. In September, 1937, an Immigration Inspector at Seattle asked for a warrant as a step toward such deportation. The Dies Committee (q.v.) called upon Secretary of Labor Perkins, without success, in the summer of 1938, to proceed for the deportation of Bridges. Action against Bridges was deferred until after the Supreme Court's (q.v.) ruling of Apr. 17, 1939, in the Strecker case, putting on the Government the burden of proving that a person whom the Government would deport was still an actual member of the Communist Party.

The hearings that began under these circumstances on July 10 were those of a unit of the administrative, not of the judicial, branch of the Government; they did not strictly follow the courts' procedure. Normally hearings for deportation were conducted by the Bureau of Immigration in private; in Bridges' case they were held on Angel Island, in the San Francisco area, reachable only by a Government boat, to which reporters but not the public in general had passes. The opportunity for such popular demonstrations as had marked the Sacco-Vanzetti and Mooney

cases was comparatively slight. Witnesses for either side offered great abundance of testimony, totaling over 1,500,000 words. The main outline of the case, however, was simple; the chief points at issue were, whether Bridges had entertained with the Communist Party such relations as constituted affiliation, and whether the Communist Party was an organization advocating the overthrow of the U.S. Government by force. A former labor leader and Communist member named John L. Leech identified Bridges as the same person whom he had twice seen addressing Communist meetings under the name of Rossi; after admitting that he had later signed a statement denying that Bridges belonged to the Communist Party, Leech revoked this denial, explaining that a delegation of three other Communists had called upon him to write the denial and that fear of consequences had forced him to do so. Bridges' counsel produced a purported signed affidavit of Leech containing such a denial, and Leech in turn denied that this was the paper that he had signed. Much expert and other testimony followed, as to whether the document were genuine, whose hand had interpolated some passages, and whether Leech had been bribed. His testimony, corroborated in part by his wife's, ranked first among the accounts of a dozen or more witnesses as to Bridges' having been a Communist. Witnesses for Bridges were brought forward to impair in various ways the credibility of those against him and particularly to establish the view that efforts had been made by an agent of the American Legion to hire accusers. Bridges, on his own account, acknowledged that he had at times sought the aid of the Communist organization for his plans concerning the International Longshoremen's and Warehousemen's Union, but denied that he had ever himself joined the party. Either side brought up men of academic rank to testify that the Communists did or did not intend a violent end to the United States Government.

A report from Examiner Landis was rendered on December 29; it was not made public, and was reported to run to 75,000 words. An accompanying published letter from Landis said that evidence "did not permit the conclusion" that Bridges was a member of the Communist party or affiliated with it.

BRIGHAM YOUNG UNIVERSITY. A coeducational institution at Provo, Utah, founded in 1875 and maintained under the auspices of the Church of Jesus Christ of Latter-day Saints. In the 1939 summer session 608 students were enrolled; in the autumn session enrollment was 2379. The faculty numbered 159 members. The budget for the year was \$428,000, the endowment, \$277,199, and the income (1938-39) \$505,795. During 1939 the construction of a Chapel Building was begun at a cost of \$250,000. President, Franklin Stewart Harris, Ph.D.

BRISTOL, REAR ADMIRAL MARK LAMBERT, U.S.N., RET. An American naval officer, died in Washington, May 13, 1939. Born in Glassboro, N. J., Apr. 17, 1868, he was graduated from the U.S. Naval Academy in 1887. In 1904 he was in charge of the torpedo branch of the Ordnance Department and during 1907-08 commanded the *Connecticut* on a round-the-world cruise. He saw service on the China Station during 1912-13, was then promoted to captain, and placed in charge of the organization and development of the aeronautical division of the U.S. Navy. At this time he was a member of the first National Advisory

Committee for Aeronautics. After the entrance of the United States in the World War he was placed in command of the *North Carolina*, conveying troops to Europe, and in July, 1918 was placed in command of the *Oklahoma*, Battleship Division 6 in Europe. In October, 1918 he was given command of the U.S. Naval Base at Plymouth, England, and was a member of the International Armistice Commission. Relieved of this command in January, 1919 he was made commander of the U.S. Naval Detachment in the Eastern Mediterranean.

On Aug. 12, 1919, Bristol was named U.S. High Commissioner to Turkey, but before embarking on these duties he acted as a member of the international committee of inquiry into the Greek occupation of Smyrna. His work in Turkey, where he was ambassador in all but name, won him high praise from the State and Navy Departments, and in 1921 he was promoted to the permanent rank of rear admiral. In 1927 Admiral Bristol was named the commander of the Asiatic Fleet with the rank of Admiral, and in 1930 he was made chairman of the General Board. His retirement took effect on May 1, 1932. Thereafter, he was Washington representative of the estate of Edward B. McLean.

Admiral Bristol was one of the American delegates to the Lausanne Conference (1922-23), and in December, 1938 was elected president of the American Peace Society.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. An association founded in York, England, in 1831, and incorporated by Royal Charter in 1928, for the purpose of fostering the interests of workers in all branches of science, and to give a stronger impulse to scientific research, both theoretical and practical.

The 109th annual meeting, shortened three days by the outbreak of War, was held in Dundee, Scotland, Aug. 30 to Sept. 1, 1939, under the presidency of Sir Albert Seward, who opened the session with an address entitled "The Western Isles Through the Mists of the Ages."

Because of the shortened meeting all the addresses delivered by the sectional presidents were not given, but were taken as read. Those that were delivered were published in the new quarterly series No. 1 of *The Advancement of Science* for October, 1939. The addresses were: "Perspectives in Evolution" by Prof. James Ritchie (zoology); "The Scope and Limitations of Physical Anthropology" by Prof. W. E. Le Gros Clark (anthropology); "The Interpretation of Plant Structure" by Prof. D. Thoday (botany).

Sir Richard Gregory was elected president to succeed Sir Albert Seward, and Newcastle-on-Tyne was selected as the site of the 1940 meeting. The secretary was O. J. R. Howarth, and the headquarters of the Association were at Burlington House, London, England.

BRITISH CAMEROONS. See CAMEROONS, BRITISH.

BRITISH COLUMBIA. The far-western province of Canada. Area, 366,255 square miles; population (1939 estimate), 774,000 compared with (1931 census) 694,263. Chief towns (1931 census figures in parentheses): Victoria, capital (39,082), Vancouver (246,593), New Westminster (17,524), North Vancouver (8510), Trail (7573), Nanaimo (6745), Prince Rupert (6350), Kamloops (6167). During 1937 there were 11,279

births, 7973 deaths, and 6191 marriages. Education (1936-37): 141,382 students in elementary and secondary schools, and 4236 students in schools for higher education.

Production. The gross value of agricultural production for 1938 was \$42,764,000. Crops produced in 1939 included oats (6,039,000 bu.), wheat (1,759,000 bu.), barley (762,000 bu.), rye (120,000 bu.), flaxseed (4000 bu.), hay and clover (314,000 tons), apples (1,941,900 bbl.). Livestock in the province (1939): 314,700 cattle, 168,900 sheep, 68,300 horses, 49,800 swine. Fur production (1936-37): 215,966 pelts valued at \$1,411,668. The output of the forests (1937) was equivalent to 689,747 M cu. ft. valued at \$37,789,995. Fisheries (1938) accounted for 228,143 tons of fish (exclusive of whales and seals) valued at \$18,672,000.

Mineral production for 1938 was valued at \$64,549,130 of which gold (605,617 fine oz.) accounted for \$21,302,578; lead (413,706,307 lb.), \$13,834,339; zinc (229,363,564 lb.), \$9,199,443; copper (65,759,265 lb.), \$6,557,514; silver (11,186,563 fine oz.), \$4,863,582; coal (1,440,287 tons), \$5,237,077. During 1937 the 1713 factories (including those in the Yukon), with 42,576 employees, produced goods valued at \$99,359,051 net.

Government. For the fiscal year ended Mar. 31, 1938, revenue totaled \$31,036,942; expenditure, \$27,672,043. On Mar. 31, 1938, the gross public debt was \$188,946,554 against which the sinking funds amounted to \$36,406,319. The King is represented by a lieutenant-governor (appointed by the Governor General in Council), aided by a ministry of 9 members which is responsible to the legislature and resigns when it fails to hold the confidence of that body. There are 48 members (31 Liberals, 8 Conservatives, 7 Co-operative Commonwealth Federationists, and 2 others elected on June 1, 1937) in the legislature, elected for a 5-year term by adult suffrage. Six senators (appointed for life) and 16 elected commoners represent the province in the Dominion parliament at Ottawa. Lieut.-Gov., Eric W. Hamber (appointed May 1, 1936); Premier, T. D. Pattullo (Liberal).

BRITISH EAST AFRICA. See KENYA, NYASALAND, TANGANYIKA, UGANDA, and ZANZIBAR.

BRITISH EMPIRE. The world's largest empire, comprising an area of 13,353,952 square miles and a population of about 500,775,000. It consists of:

1. The United Kingdom of Great Britain and Northern Ireland. See GREAT BRITAIN; IRELAND, NORTHERN.

2. Self-governing Dominions—AUSTRALIA, CANADA, NEWFOUNDLAND (temporarily administered as a crown colony), NEW ZEALAND, UNION OF SOUTH AFRICA.

3. IRELAND (EIRE), a sovereign, independent state, associated for certain purposes with the United Kingdom and the self-governing dominions, which are sometimes referred to collectively as the British Commonwealth of Nations.

4. INDIA and BURMA.

5. Self-governing colonies—CEYLON and SOUTHERN RHODESIA.

6. Crown colonies and protectorates—ADEN, ASHANTI, BAHAMAS, BARRADOS, BASUTOLAND, BECHUANALAND, BERMUDA, BRITISH GUIANA, BRITISH HONDURAS, BRITISH SOLOMON ISLANDS, BRITISH SOMALILAND, CYPRUS, FALKLAND ISLANDS, FIJI, GAMBIA, GILBERT AND ELLICE ISLANDS, GIBRALTAR, GOLD COAST, GRENADA, HONG

KONG, JAMAICA, KENYA, LEEWARD ISLANDS, MALTA, MAURITIUS, NIGERIA, NORTHERN RHODESIA, NYASALAND, ST. HELENA, ST. LUCIA, ST. VINCENT, SEYCHELLES, SIERRA LEONE, STRAITS SETTLEMENT, SWAZILAND, TRINIDAD AND TOBAGO, UGANDA, ZANZIBAR.

7. Protectorates of a special nature—FEDERATED MALAY STATES, UNFEDERATED MALAY STATES.

8. Mandates held by the United Kingdom—BRITISH CAMEROONS, PALESTINE, TANGANYIKA TERRITORY, TRANS-JORDAN, TOGOLAND (British sphere).

9. Mandates held by Dominions—NAURU (Australia), NEW GUINEA (Australia), SOUTH-WEST AFRICA (Union of South Africa), WESTERN SAMOA (New Zealand).

10. Dependencies of Dominions—LABRADOR (Newfoundland); PAPUA, NORFOLK ISLAND, AUSTRALIAN ANTARCTIC TERRITORY (Australia); UNION ISLANDS OF TOKELAU and ROSS DEPENDENCY (New Zealand).

11. Territories held under condominium—ANGLO-EGYPTIAN SUDAN (United Kingdom and Egypt), NEW HEBRIDES (United Kingdom and France).

See the separate articles on each of the above.

BRITISH EXPEDITIONARY FORCES (B.E.F.). See EUROPEAN WAR.

BRITISH GUIANA, *gê-â'na*. A British crown colony in northern South America, between Venezuela and Surinam (Netherlands Guiana). Area, 89,480 square miles; population (Jan. 1, 1938), 337,039 including 142,978 East Indians. During 1937 there were 11,227 births (33.3 per 1000), 7367 deaths (21.9 per 1000), and 1812 marriages (10.8 per 1000). Chief cities: Georgetown (capital), 67,448 inhabitants in 1937; New Amsterdam, 9514. Education (1937): 240 primary schools and 52,318 pupils; secondary schools had 1829 pupils enrolled.

Production and Trade. The chief products are sugar, rice, rum, coconuts, coffee, limes, timber, gold, diamonds, and bauxite. Deposits of vegetable pitch and manganese have been found. Livestock (1937): 129,540 cattle, 33,273 sheep, 26,667 swine, 12,497 goats, 7391 donkeys, and 3025 horses. In 1938, imports were valued at \$10,610,262 (flour, cotton goods, sulphate of ammonia, and wearing apparel were the main items); exports, \$13,065,606 of which sugar (183,479 tons) accounted for \$7,573,902; bauxite (376,368 tons), \$2,038,273; gold (39,728 oz.), \$1,030,778; diamonds (33,508 carats), \$377,131. The sugar quota for 1938-39 was set at 188,000 metric tons. There were, in 1938, 79 miles of railway (1,462,891 passengers and 110,977 tons of freight carried), 559 miles of roads, 514 miles of trails, 5300 miles of telephone lines, and 317 miles of telegraph lines.

Government. For 1938, revenue totaled £1,302,520; expenditure, £1,312,177; public debt (Dec. 31, 1937), £4,525,685 against which the sinking fund amounted to £499,083. The British Guiana (Constitution) Order in Council, 1928 (amended in 1935) provided for the government of the colony, and for the introduction of a legislative council of 30 members (the governor as president, 10 official, 5 nominated unofficial, and 14 elected) which was to be dissolved every 5 years, unless previously dissolved, and a general election held. There is an executive council of 10 members (the governor, 2 ex-officio, 4 official, and 5 unofficial; the last 9 must be members of the legislative council). Governor, Sir W. E. F. Jackson (assumed office Jan. 19, 1937).

History. On Feb. 16, 1939 strike disturbances occurred on a sugar estate and 4 persons were killed and 23 policemen were wounded. Work on a number of other estates ceased but after a conference an agreement for procedure in settling disputes was agreed upon by the Sugar Producers' Association and the trade union. Two waterfalls, each 200 ft. wide, one 1600 ft. high and the other 1200 ft. high, were discovered by Dr. Paul A. Zahl of New York City who explored the region around Mt. Roraima.

Trial settlements of 3000 to 5000 carefully selected young men and women with properly equipped technical organization and competent leadership were recommended by the British Guiana Refugee Commission which reported to the Advisory Committee on Political Refugees appointed by President Roosevelt of the United States. The Commission said that British Guiana is not suitable for immediate large-scale settlement. Industrial as well as agricultural development was suggested by the British government who adopted the Report (Cmd. 6014 and 6029; H.M. Stationery Office, London) and said that they were prepared to build the necessary roads and communications, and provide the administrative and other services. It was announced on Sept. 29, 1939, that Malcolm MacDonald, the British Colonial Secretary, had informed the British House of Commons that the outbreak of war had caused a postponement of plans by private organizations to form a corporation to introduce trial settlements of refugees in British Guiana.

BRITISH HONDURAS, *hôn-dôo'ras*. A Central American British crown colony. Area, 8598 square miles; population (Jan. 1, 1939), 57,767. Chief city: Belize (16,687 inhabitants in 1931). During 1938 there were 2052 births (3.55 per cent), 1178 deaths (2.03 per cent), and 447 marriages (0.77 per cent). In the same year the 111 schools (106 elementary and 5 secondary) had a total of 10,487 pupils enrolled.

Production and Trade. The chief products are mahogany, cedar, rosewood, logwood, chicle, hides and skins (mainly crocodile), cohune nuts, bananas, plantains, citrus fruits, coconuts and copra, maize, sugar, rum, rice, livestock, tortoise shell, shark products, lobsters, sponges, and fish. Forest products represented 80.5 per cent of the total exports by value. In 1938, imports were valued at \$4,004,091; exports, \$3,263,384. The U.S.A. supplied 30.78 per cent of the imports and received 72.84 per cent of the exports. Shipping of all kinds entered and cleared during 1938 totaled 519,480 tons.

Communications. Internal transportation is carried on by means of the numerous rivers except for traffic between the district of Cayo and the Peten district of Guatemala where mules are in use. There were, in 1938, 172 miles of good roads. An airplane service for passengers and freight to Honduras, Guatemala, and other southern points is maintained by the "Taca" Company.

Government. For the year ended Dec. 31, 1938, revenue (excluding \$482,503 paid from the Colonial Development and Loan funds) totaled \$1,258,099; expenditure (excluding \$534,545 for Colonial Development grants and Loan works), \$1,337,868; public debt, \$3,337,210 against which the sinking fund for redemption of the funded portion of the debt amounted to \$464,588. According to the British Honduras Constitution Ordinance, 1935 (as amended by Ordinance No. 18 of 1935 and Ordinance No. 21 of 1938) the legislative

council consists of the governor as president, 5 official members, and 8 unofficial members (2 nominated by the governor and 6 elected for 5 constituencies). The executive council, in 1938, included the governor, 3 ex officio members and 5 nominated members (4 were non-officials). Governor and Commander-in-Chief, Sir Alan C. M. Burns (appointed May 18, 1934). See GUATEMALA under *History*.

BRITISH MALAYA. A geographical term for that part of the Malay archipelago extending from 6° 50' north latitude to Singapore. It includes the following political divisions: Straits Settlements (with Christmas and Cocos Islands), Federated Malay States, and Unfederated States. Strictly speaking, the term should include the British controlled states on the island of Borneo (British North Borneo, Brunei, and Sarawak), but the statistics for these political divisions are not included in this article. Total area, 51,977 square miles; population (Jan. 1, 1937), 5,138,000.

Production and Trade. Rubber, tin, copra, pineapples, coconut oil, palm oil, sugar, rice, areca nuts, timber, gold, and resin are the chief products. In 1938, imports were valued at \$554,993,000; exports, \$579,649,000 of which rubber (526,911 tons) accounted for \$272,980,376 and tin for \$96,339,078 (\$\$ averaged \$0.5692 for 1938). Exports of ilmenite (recovered from the waste material after tin ore has been removed from its alluvium) increased from 50 tons in 1934 to 6461 tons in 1938. Fishing is an important industry. There were 7800 miles of roads in 1939. See FEDERATED MALAY STATES, STRAITS SETTLEMENTS, and UNFEDERATED MALAY STATES.

BRITISH NEW GUINEA. See PAPUA, TERRITORY OF.

BRITISH NORTH BORNEO. A British protected state of Borneo. Area, 29,500 square

miles; population (1938), 299,000. Chief towns: Sandakan (13,826 inhabitants in 1931), the capital, and Jesselton. Education (1937): 4736 students and 49 schools. The chief products are rubber, timber, sago, rice, coconuts, gums, coffee, dried fish, Manila hemp, and tobacco. In 1938, imports were valued at \$6,211,817; exports, \$9,525,132. Finance (1937): revenue, \$3,556,144; expenditure, \$1,797,510 (\$\$ averaged \$0.5797 for 1937; \$0.5692 for 1938). The state is administered by the British North Borneo (Chartered) Company. Appointment of the governor (who is responsible to the Court of Directors in London) for British North Borneo is subject to the approval of the British Colonial Secretary. Governor, C. R. Smith (appointed July 17, 1937).

BRITISH SOMALILAND. See SOMALILAND, BRITISH.

BRITISH WEST AFRICA. The British territories in West Africa. See CAMEROONS, BRITISH; GAMBIA; GOLD COAST; NIGERIA; SIERRA LEONE.

BRITISH WEST INDIES. The possessions of Great Britain in the West Indies consisting of (1) Bahamas, (2) Barbados, (3) Jamaica with Turks Islands, (4) Leeward Islands, (5) Trinidad and Tobago, (6) Windward Islands. Consult the separate articles. A review of labor conditions, as well as recommendations for improving the general situation, are included in Major Orde Brown's report entitled *Labor Conditions in the West Indies* (Cmd. 6070; H.M. Stationery Office, London; 1939).

BROADCASTERS, NATIONAL ASSOCIATION OF. See RADIO PROGRAMS.

BROADCASTING STATIONS. A list of the larger broadcasting stations in the United States (i.e. those having 50 kilowatt power) is given in the accompanying table. For an account

UNITED STATES RADIO BROADCAST STATIONS HAVING POWER OF 50 KW (JAN. 1, 1939)

State	City	Call Letter	Licensee	Frequency (kc)
Calif.	Los Angeles	KFI	Earle C. Anthony, Inc.	640
"	Los Angeles	KNX	Columbia Broadcasting System, Inc.	1050
"	San Francisco	KPO	National Broadcasting Co., Inc.	680
Colo.	Denver	KOA	National Broadcasting Co., Inc.	830
Conn.	Hartford	WTIC	Travelers Broadcasting Service Corp.	1060
D. C.	Washington	WJSV	Columbia Broadcasting System, Inc.*	1460
Ga.	Atlanta	WSB	Atlanta Journal Co.	740
Ill.	Chicago	WBBM	Columbia Broadcasting System, Inc.	770
"	Chicago	WENR	National Broadcasting Co., Inc.	870
"	Chicago	WGN	WGN, Inc.	720
"	Chicago	WLS	Agricultural Broadcasting Co.	870
"	Chicago	WMAQ	National Broadcasting Co., Inc.	670
Iowa	Des Moines	WHO	Central Broadcasting Co.	1000
Ky.	Covington	WCKY	L. B. Wilson, Inc.	1490
"	Louisville	WHAS	The Louisville Times Co.	820
La.	New Orleans	WWL	Loyola University	850
Mass.	Boston	WBZ	Westinghouse Electric & Mfg. Co.	990
Mich.	Detroit	WJR	WJR, The Goodwill Station	750
Minn.	Minneapolis	WCCO	Columbia Broadcasting System	810
Mo.	St. Paul	KSTP	National Battery Broadcasting Co. ^b	1460
N. J.	St. Louis	KMOX	Columbia Broadcasting System, Inc.	1090
N. Y.	Newark	WOR	Bamberger Broadcasting Service, Inc.	710
"	New York	WABC-WBOQ	Columbia Broadcasting System	860
"	New York	WEAF	National Broadcasting Co., Inc.	660
"	New York	WJZ	National Broadcasting Co., Inc.	760
"	Rochester	WHAM	Stromberg-Carlson Telephone Mfg. Co.	1150
"	Schenectady	WGY	General Electric Co.	790
N. C.	Charlotte	WBT	Columbia Broadcasting System, Inc.	1080
Ohio	Cincinnati	WLW	The Crosley Corp.	1070
"	Cleveland	WTAM	National Broadcasting Co., Inc.	1170
Penn.	Philadelphia	WCAU	WCAU Broadcasting Co.	980
"	Pittsburgh	KDKA	Westinghouse Electric & Mfg. Co.	650
Tenn.	Nashville	WSM	National Life & Accident Insurance Co.	1040
Texas	Dallas	KRLD	KRLD Radio Corp.	1040
"	Dallas	WFAA	A. H. Belo Corp.	800
"	Fort Worth	WBAP	Carter Publications, Inc.	1190
"	San Antonio	WOAI	Southland Industries, Inc.	1130
Utah	Salt Lake City	KSL	Radio Service Corp. of Utah	1130
Va.	Richmond	WRVA	Larus & Brother, Co., Inc.	1110

* Subsequently changed to Cincinnati, Ohio. ^b Construction authorized.

of the number of stations licensed and other events of the year, see **FEDERAL COMMUNICATIONS COMMISSION**. It was expected that some 650 United States stations would receive new frequency assignments late in 1940 as a result of the North American regional broadcast agreement, which went into effect, Dec. 28, 1939. The agreement was concluded by Canada, Cuba, Haiti, Mexico, and the United States for the purpose of eliminating interference between stations. See **RADIO**; **RADIO PROGRAMS**.

BROOKINGS INSTITUTION. An organization devoted to public service through research and training in the social sciences. Established in Washington, D. C., in 1927, it maintains as operating units the Institute of Economics, the Institute for Government Research, and a division of training in which only those who have had at least two years of graduate work are accepted as research fellows.

In carrying out its purpose to aid constructively in the development of sound national policies without regard to the special interests of any group, whether political, social, or economic, the Institution conducted during 1939 several significant investigations. The resulting studies were published under the following titles: *Government and Economic Life*; *Reorganization of the National Government*; *British Wages Boards*; *Odd-Lot Trading on the New York Stock Exchange*.

The Institution is supported from endowment funds and annual grants. The officers of the board of trustees for 1939-40 were: Chairman, Dwight F. Davis; vice chairman, Dean G. Acheson; president, Harold G. Moulton; treasurer, Henry P. Seidemann; and secretary, Elizabeth H. Wilson. Headquarters are at 722 Jackson Place, Washington, D. C.

BROOKLYN COLLEGE. A coeducational institution of higher education in Brooklyn, N. Y., founded in 1930 as one of the four institutions of higher learning, supported by municipal taxes and administered by the Board of Higher Education. The others are Hunter College, Queens College, and the City College. The enrollment for the autumn of 1939 was 13,901, of whom 6691 were in the Day Session, 6112 in the Evening Session, 472 in the Division of Courses for Teachers, and 629 in the Graduate Division. The 1939 summer session had an attendance of 3709. The faculty numbered 536 including 20 additions. The amount of endowment and income for the year was \$2,315,407 including the city appropriation of \$1,971,356. There were 63,000 volumes and 480 periodicals in the library. Brooklyn College moved into its new quarters at Bedford Avenue and Avenue H in October, 1937. There are five buildings which will accommodate 7500 students in the day and 7500 in the evening. The cost is \$5,500,000 financed by a PWA loan and grant. The site of 42 acres cost \$1,600,000. The grounds are being landscaped by the WPA. President, Harry D. Gidonse.

BROOKLYN INSTITUTE OF ARTS AND SCIENCES. One of America's oldest and largest institutions for informal education, located in Brooklyn, N. Y. Its public activities are conducted at four centers: The Institute at the Academy of Music, the Central Museum, the Children's Museum, and the Botanic Garden. Founded in 1824, the Institute was incorporated in its present form in 1890. Total membership is about 8000 and is open to everyone.

The Institute at the Academy of Music presents

an annual program of concerts, lectures, forums, and classes of instruction in every major field of the arts and sciences. Approximate attendance at these events for the season 1938-39 was 250,000. The Institute's Museums possess collections in art, ethnology, and natural science. The Central Museum reference library contains more than 27,000 volumes as well as many pamphlets and complete sets of rare periodicals. It includes the Steward Culin Library on Ethnology and the Charles Edwin Wilbour Library on Egyptology. Attendance at both Museums for the year 1939 totaled 486,218. The Institute's Botanic Garden comprises more than 50 acres and plant houses containing tropical and sub-tropical species. The Botanic Garden reference library has over 25,000 volumes and pamphlets. Botanic Garden attendance for the year 1939 totaled 1,798,029.

In 1939 the permanent funds of the Institute amounted to \$4,394,316.53 and the funds to meet current expenses, to \$907,401.24. Under a general reorganization plan adopted in April, 1938, James G. McDonald was named president of the Institute. Other officers are: Edward C. Blum, chairman of the board of trustees; Julius Bloom, associate director of the Institute at the Academy of Music; Laurance P. Roberts, director of the Museums; Mrs. William Lloyd Garrison, 3d, curator-in-chief of the Children's Museum; C. Stuart Gager, director of the Botanic Garden. Executive offices are located in the Academy of Music, 30 Lafayette Avenue, Brooklyn.

BROUN, (MATTHEW) HEYWOOD (CAMPBELL). An American newspaper writer, died in New York, Dec. 18, 1939. Born in Brooklyn, N. Y., Dec. 7, 1888, he studied at Harvard University (1906-10) but did not graduate. He was the son of Heywood Cox Broun and Henrietta Brose Broun. His father, the owner of a printing business, was of English-Scotch descent. Heywood worked as a reporter on the *Morning Telegraph*, New York during 1908-09 and again during 1910-12. He then joined the staff of the *New York Tribune* as a reporter and subsequently as a sports writer, becoming known for his baseball writings. He served as a war correspondent in France in 1917. In 1921 he went with the *New York World*, where he became dramatic critic. During this period he began the column "It Seems to Me," and he remained with *The World* as a columnist until 1928, when in a disagreement with the newspaper over the Sacco-Vanzetti case, the connection was severed. He then joined the Scripps-Howard newspapers, contributing his column to the *New York Telegram* and later to the *World-Telegram*. On Dec. 14, 1939 he left that paper to join the *New York Evening Post*, and on December 15th his first and last column for that paper appeared. A gifted writer, his early columns tended to the whimsical, but after 1924 he broadened the scope of his writings.

His extra-curricular activities were often distressing to his publishers. In 1930 he ran unsuccessfully for Congress on the Socialist ticket; in 1931 he produced a musical comedy, *Shoot the Works* for unemployed actors; in 1933, with other reporters and writers, he organized the American Newspaper Guild and was its president thereafter. He was a founder of *The Connecticut Nutmeg*, which subsequently he took over as *Broun's Nutmeg*.

Besides lecturing on the drama at Columbia University in 1920 and at the Rand School in 1921, and contributing to magazines, Mr. Broun

was the author of *A.E.F.—with General Pershing and American Forces* (1918); *Seeing Things at Night* (1921); *Pieces of Hate* (1922); *The Boy Grew Older* (1922); *The Sun Field* (1932); *Sitting on the World* (1924); *Gandle Follows His Nose* (1926); *Anthony Comstock, Roundsman of the Lord*, with Margaret Leech (1927), and *Christians Only*, with George Britt (1931).

Heywood Broun's death evoked public expressions of sorrow from many noted persons, including President Roosevelt, Governor Herbert H. Lehman, Mayor Fiorello H. La Guardia and John H. Lewis. He had been associated with Mr. Lewis in many of the latter's labor activities, supporting him with the Newspaper Guild.

Mr. Broun was married to Ruth Hale, president of the Lucy Stone League, in 1917; the marriage ended in divorce in 1933. A year later he was married to Connie Madison Dooley. In the spring of 1939 he became a convert to the Roman Catholic Church.

BROWN UNIVERSITY. An institution of higher education in Providence, R. I., founded in 1764. It is composed of the College, for undergraduate men; Pembroke College, for undergraduate women; and the Graduate School, for men and women. The College includes a division of engineering. The enrollment in the autumn of 1939 was 1416 undergraduate men, 497 undergraduate women, and 340 graduate students. The faculty consisted of 264 members. The endowment of the University was \$11,785,927 on June 30, 1939; the income for the past fiscal year, \$1,815,516. The library contained approximately 552,000 volumes. In the fall of 1939, four courses became the normal program of study in order to allow more coherent effort and less scattering of energy. Comprehensive examinations covering the field of concentration are required for the A.B. degree. A new Infirmary for men and a Health Center for women were opened during the year. Two dormitories were acquired for undergraduate men. An addition to the John Hay Library provides three additional reading rooms and stack space for 150,000 volumes. The circulation increased 30 per cent for the second successive year. A gift of \$200,000 is making possible the restoration of University Hall, the original College Edifice built in 1770. The publication of *Mathematical Reviews*, an international journal of abstracts sponsored by the American Mathematical Society and the Mathematical Association of America, was inaugurated in 1939. A new photographic laboratory will serve subscribers at nominal cost and add to the resources of the distinguished Mathematics library. President, Henry Merritt Wriston, Ph.D., Litt.D., LL.D. See **ARCHAEOLOGY**.

BRUNEI, brōō-nī'. A native state under British protection, in northern Borneo. Area, 2226 square miles; population (Jan. 1, 1938), 35,963. During 1937 there were 1472 births and 772 deaths. Education (1937): 1565 pupils in 25 primary schools. Capital, Brunei (10,453 inhabitants in 1931). The chief products are crude oil, rubber, cutch, jelutong, natural gas, and sago. In 1937, imports were valued at \$2,516,154; exports, \$5,553,428; revenue, \$1,049,293; expenditure, \$653,149 (\$5 averaged \$0.5797 for 1937). Brunei is ruled by a sultan, subject to the advice of the British Resident (under the High Commissioner at Singapore) who has charge of the administration of government. Ruler, Ahmed Tajudin Akharui Khair Wadin (succeeded September, 1924);

British Resident, J. Graham Black (assumed office, January, 1937).

BRUNSWICK. See table of German states in the article on **GERMANY**.

BRYN MAWR COLLEGE. An institution for the higher education of women in Bryn Mawr, Pa., founded in 1885. The enrollment for the autumn of 1939 totaled 635. The teaching staff numbered 100. The productive funds of the college amounted to \$6,639,267, and the receipts for the year 1938-39 were \$923,896. The Library contained 163,500 volumes. President, Marion Edwards Park, Ph.D., LL.D.

BUCKNELL UNIVERSITY. A coeducational Baptist institution of higher learning in Lewisburg, Pa., founded in 1846 under the name of the University of Lewisburg but renamed in 1886 in honor of its benefactor, William Bucknell. In the autumn of 1939 the enrollment was 1276, of whom 815 were men and 461 women. At the junior branch in Wilkes-Barre, Pa., there were 212 students. There were 566 students enrolled in the summer session of 1939. The faculty numbered 95. The productive funds amounted to \$1,387,523.14; the income for the year was \$872,017.82, and the benefactions received were \$363,480.13. The library contained 94,500 volumes. Construction was completed on a \$275,000 addition to the Engineering Building. President, Arnaud C. Marts.

BUDGET. See **PUBLIC FINANCE**.

BUFFALO, THE UNIVERSITY OF. A coeducational institution of higher learning in Buffalo, N. Y., founded in 1846. The enrollment in the various schools for the autumn of 1939 was: Full-time students, 1744; part-time students, 2914. The enrollment for the 1939 Summer Session was 842. The faculty numbered 603. The endowment fund totaled \$5,654,951, and the income for the year (1938-39) was \$1,035,812. The libraries contained 152,477 volumes and 100,099 pamphlets. Chancellor Samuel P. Capen, Ph.D., Sc.D., L.H.D., Litt.D., LL.D.

BUILDING. The year 1939 closed with private building and engineering work going at a fairly satisfactory rate, but public construction was very markedly on the down grade, according

CONSTRUCTION CONTRACTS AWARDED

[Millions of dollars]*

	1938			1939		
	Building Resi- dential	Non- resi- dential	Public Works & Utili- ties	Building Resi- dential	Non- resi- dential	Public Works & Utili- ties
Jan.....	36.2	57.4	98.6	80.2	85.0	86.5
Feb.....	40.0	48.4	30.5	79.0	69.6	71.6
Mar.....	79.4	87.8	59.7	125.2	97.8	77.7
Apr.....	74.6	80.4	67.0	114.4	97.6	121.0
May.....	83.2	77.8	122.2	133.8	76.8	97.9
June.....	85.7	81.8	83.5	111.9	92.8	83.6
July.....	88.0	72.5	79.3	109.3	88.5	102.1
Aug.....	99.7	87.3	126.1	127.2	79.8	115.3
Sep.....	99.6	92.0	109.3	129.7	92.4	111.1
Oct.....	112.7	111.0	114.0	118.3	72.7	70.8
Nov.....	95.3	116.0	90.4	116.6	77.8	105.5
Dec.....	91.5	139.5	158.4			
Year.....	985.8	1,071.1	1,139.0	1,334.3	965.6	1,250.6

* F. W. Dodge Corporation figures for 37 states east of the Rocky Mountains.

to the F. W. Dodge Corporation, New York. General business and industrial activity, on the up-grade since June, 1939, were given an added stimulus by the outbreak of war in Europe and revision of United States neutrality legislation. The war's effect on private construction so long

as the United States remains neutral is apt to be indirect. From information covering 37 eastern states of the United States, non-residential construction contracts based on 10 months data was estimated at \$958,000,000 or 11 per cent less than in 1938; while the total residential contracts amounted to \$1,340,000,000 or 36 per cent more than in 1938. The value of new contracts for both residential and non-residential building in 1938 and 1939 is shown month by month in the foregoing table.

The cumulative valuation of building permits, compiled by Dun & Bradstreet, Inc., of 215 cities during 11 months of 1939 amounted to \$1,164,144,313, representing a 10 per cent rise from the \$1,057,961,233 for the same period last year. All sections, except the Middle Atlantic States, showed gains over last year; these ranged from 10.4 per cent in the Pacific group to 51.6 per cent for the East Central group.

BUILDING PERMIT VALUES OF 215 CITIES IN THE UNITED STATES

(Compiled by Dun & Bradstreet, Inc.)

Geographical Groups	Eleven Months		% Change
	1939	1938	
New England . . .	\$71,230,418	\$54,782,879	+30.0
Mid. Atlantic . . .	333,913,123	429,292,103	-22.2
South Atlantic . .	128,610,423	96,570,735	+33.2
East Central . . .	237,489,504	156,665,804	+51.6
South Central . . .	125,841,565	97,556,967	+29.0
West Central . . .	65,659,341	44,853,060	+46.4
Mountain	24,793,733	18,332,458	+35.2
Pacific	176,606,206	159,907,227	+10.4
Total U S	\$1,164,144,313	\$1,057,961,233	+10.0
New York City . . .	\$221,679,158	\$343,039,249	-35.4
Outside N Y C . . .	\$942,465,155	\$714,921,984	+31.8

At the end of 1939's building season the Federal Housing Administration (FHA) reported that approximately 150,000 non-farm dwelling units were built in the past year, a gain of 30 per cent over 1938 and the highest for any year since 1929. The construction of new single-family homes possibly will equal or surpass the number built in 1929. Insurance of new home mortgages by the FHA will show a gain of about 40 per cent over 1938 and will total the largest volume in its five-year history. An average of between 2500 and 3000 small homes have been started under FHA inspection each week from May to October or during the building season of 1939. By the end of the year more than 2,000,000 people were living in houses built or financed under the FHA's home-ownership program, and almost 100,000 more in large scale housing projects built for rent under the FHA program.

Urban residential construction in the United States, according to the Federal Home Loan Bank Board, reached a nine-year peak in 1939, the first billion-dollar year since 1930, and only unexpected adverse influences resulting from the European war can prevent expanding activity in 1940. In spite of uncertainties arising out of the war, the outlook for construction of new homes and the improvement of existing ones appears good. The volume of applications on homes to be built under FHA inspection in 1939 ran well ahead of the previous year. Renewed public confidence in the values of home ownership, as the result of the lower interest rates and long-term amortized loans—direct reduction loans which provide for the liquidation of mortgages in a definite, specified period—was cited as as-

suring an increasing volume of building in the near future.

Analyzing certain building trends in the United States during 1939, the national secretary of the American Institute of Architects states: "One of the outstanding factors was the continued decline in population in the large civic centers and the steadily increasing development of the suburban areas. Attention is called to the apparently rising tendency to raze business properties which are no longer paying investments to provide parking spaces and the tearing down of many residential properties to reduce taxes. The destruction of large structures formerly well tenanted and returning substantial incomes, means a reduction in municipal tax returns, and presents a serious problem for city governments. Capital investments in new construction during 1939, other than housing, lagged behind normal. Industrial building, which has slumped for several years, showed increasing activity toward the end of 1939. Building materials may be expected to advance in price with an increase in demand, but as long as there is a sufficient supply of building mechanics to meet the demand it is not likely that wages will advance materially." See also ARCHITECTURE; BUSINESS REVIEW; HOUSING.

CHAS. H. HUGHES.

BULGARIA. A Balkan monarchy. Capital, Sofia. King in 1939, Boris III, who succeeded to the throne Oct. 3, 1918.

Area and Population. Area, 39,825 square miles; estimated population on Dec. 31, 1938, 6,371,000 (1934 census, 6,077,939). The estimated population of Sofia in 1937 was 350,000 (with suburbs); of other cities in 1936: Plovdiv (Philippopolis), 125,000; Varna, 75,000; Ruse (Rus-chuk), 51,000; Burgas, 30,000. Living births in 1938 numbered 141,967 (22.4 per 1000); deaths, 85,167 (13.4 per 1000); marriages, 53,043 (8.4 per 1000).

National Defense. The army has a peacetime strength of about 60,000 officers and men and a wartime strength of about 500,000. The military restrictions imposed on Bulgaria by the Treaty of Neuilly in 1919 were removed July 31, 1938. In 1939 Bulgaria was weak in airplanes and modern armaments but was rearming rapidly. See *History*.

Education and Religion. According to the 1934 census, 20.4 per cent of the male and 42.8 per cent of the female population were illiterate. There were 7782 schools of all kinds with 1,086,849 students in 1937-38, including 5325 elementary schools, with 659,633 pupils, and 2 universities, with 7914 students. The religious affiliations of the population at the 1934 census were: Orthodox (State) Church of Bulgaria, 5,128,890; Moslems, 821,298; Jews, 48,398; Roman Catholics, 45,704.

Production. Agriculture and fishing support about 80 per cent of the population. Production of the chief cereals in 1939 was (in metric tons): Wheat, 1,936,500; barley, 333,800; rye, 245,700; oats, 127,900; corn (1938), 532,300. Production of other crops in 1938 was (metric tons): Rice, 19,100; potatoes, 63,500; beet sugar (1938-39), 21,000; tobacco, 17,200; cotton-seed, 15,800; rape-seed, 20,600; cotton, 6900. The 1938 wool clip was 9600 metric tons; raw silk, 182 metric tons. Other production in 1938 was (in metric tons): Cement, 194,000; lignite, 1,941,000; coal, 145,000; salt, 77,000; iron ore, 11,000. There is little manufacturing.

Foreign Trade. Imports in 1938 totaled 4,934,193,000 leva (4,985,914,000 in 1937); exports, 5,578,341,000 leva (5,019,499,000). The 1938 imports from Germany were 2,563,326,000 leva; Italy, 370,135,000; United Kingdom, 348,325,000; Czecho-Slovakia, 291,529,000; Poland, 275,578,000. Exports to Germany were 3,284,107,000 leva (2,364,580,000 in 1937); to Italy, 422,439,000; Poland, 318,208,000; United Kingdom, 267,051,000; Czecho-Slovakia, 255,085,000. See **IMPORTS AND EXPORTS**.

Finance. Final budget returns for 1938 showed total receipts of 7,721,600,000 leva, including loans of 43,100,000, and total expenditures of 7,207,000,000. Estimates for 1939 balanced at 7,829,300,000 leva with the aid of loans of 290,200,000 leva. The public debt on Dec. 31, 1938, was 21,778,900,000 leva (internal, 8,815,500,000; external, 12,963,400,000). The lev exchanged at \$0.0124 in 1938.

Transportation. The railways, all state-owned, had 2109 miles of standard and narrow-gauge line in 1938. The railway budget for that year was: Receipts, 2,162,788,136 leva; expenditures, 2,133,054,698 leva. Highways extended 16,354 miles in 1939 (see **ROADS AND STREETS**). The tonnage of vessels entering the ports with cargo in 1938 was 1,572,000 (1,440,000 in 1937). Air lines connect Sofia with the leading European cities.

Government. The Constitution of 1879 remained suspended from the Georgiev coup d'état of May 19, 1934, through 1939. All political parties were dissolved in 1934 and the formation of new ones was prohibited. King Boris ruled as virtual dictator after overthrowing Premier Georgiev's dictatorship on Jan. 22, 1935. The new Parliament elected in March, 1938, was deprived of practically all legislative powers. As the former political parties were not permitted to present candidates or otherwise participate in the campaign, the deputies were elected on a personal basis and government manipulation of the electoral machinery produced a pro-government majority of 104 out of 160 deputies (see 1938 **YEAR BOOK**, p. 111). For 1939 developments, see *History*.

HISTORY

Internal Developments. King Boris and his supporters continued to hold the balance of power in Bulgaria throughout 1939. The European war strengthened the King's position and enabled him to tighten his grip on Parliament in elections at the end of the year. In addition to rebuffing the drive of opposition parliamentarians to regain their former legislative powers, the King, working through the Cabinet led by Premier George Kiosseivanov, successfully combatted hostile extremists of both the Left and Right.

Communist and other ultra-radical political activities were harshly repressed. Many alleged Communists were arrested for shouting "seditious slogans" during the May Day labor demonstrations in Sofia. Another periodic round-up of Communists was announced on December 1. The various Fascist movements, mostly modeled on German Nazism, likewise felt the government's heavy hand. Some 30 leading members of the disbanded Tsankov party were arrested on February 28 for illegal political activity. On April 11 the government dissolved another Nazi organization, supported from Germany. Two other groups espousing Nazi principles—the Ratnizi party and the National Legion—were banned as criminal organizations on Sep-

tember 27 following anti-Jewish rioting in Sofia.

The Kiosseivanov Cabinet, containing only two members of Parliament, found itself in constant friction with the anti-government deputies. On April 13 the Opposition walked out of Parliament in a body when the Premier refused to discuss foreign policy. With the outbreak of war, King Boris sought to obtain wider support for his government. The Kiosseivanov Cabinet resigned on October 19, giving the King an opportunity to consult leaders of all the former political groups on Bulgarian domestic and foreign policy. On October 23 Boris asked Kiosseivanov to form another Ministry. It contained six holdovers from the previous Ministry but only one member of Parliament and none of the political leaders consulted by the King.

The following day, on the eve of another session, the government dissolved Parliament and called new elections, beginning December 24 and continuing on Jan. 14, 21 and 28, 1940. The government captured 23 out of 27 seats filled in the voting on December 24 and an overwhelming government majority was forecast for the new Parliament. It was indicated that as soon as Parliament assembled, Premier Kiosseivanov would ask for long-term emergency powers similar to those granted Premier Daladier in France.

Foreign Policy. The rapprochement of Bulgaria and Yugoslavia beginning in 1933 and the subsequent trend toward better relations with the other members of the Balkan Entente—Greece, Rumania and Turkey—was reversed in 1939 as a result of German and Soviet expansionist policies which revived Bulgarian hopes of regaining territories lost to the neighboring countries in the Balkan and World Wars. Premier Kiosseivanov set forth Bulgaria's specific territorial claims for the first time in a speech of Apr. 20, 1939, as follows: 2970 square miles from Southern Dobruja in Rumania, 2363 square miles in Eastern Greece whose cession would give Bulgaria access to the Aegean Sea, and 900 square miles from Yugoslavia (see map in 1938 **YEAR BOOK**, p. 288, for an approximation of these territories).

German Pressure. The Sofia Government was under constant political pressure from Bulgarian nationalist sentiment to obtain revision of its boundaries at any cost. While announcing on April 20 a policy of non-alliance and neutrality, the Kiosseivanov Government followed a mildly pro-German foreign policy throughout the first three quarters of 1939. This policy was inspired partly by Nazi promises of assistance in pressing Bulgarian territorial claims against Rumania and Greece (but not against Yugoslavia) and partly by the threat of German military and economic reprisals if Bulgarian politico-economic co-operation was not forthcoming.

Bulgarian revisionist claims were vigorously supported by the German press during a state visit by Premier Kiosseivanov to Berlin early in July. It was reported that the Reich sought to draw Bulgaria, Hungary and Yugoslavia into a "little axis" based upon territorial aggrandizement at the expense of Rumania and Greece, with German aid. Yugoslavia's refusal to accept the bait and Bulgaria's growing fear of economic and political vassalage to the Reich nullified this plan. On the return trip from Berlin, Premier Kiosseivanov stopped in Yugoslavia for conferences with Premier Cvetkovitch and the Chief Regent, Prince Paul. The two Premiers issued a formal statement asserting that "a policy of

independence and neutrality best answers the interests of Bulgaria and Yugoslavia and of peace in the Balkans."

Sofia's fear of the Reich was reflected in the severe measures taken against Nazi political activities within Bulgaria and in efforts to restrict the virtual German monopoly of Bulgarian foreign trade. Hitler's representatives in Sofia brought extreme pressure upon the government to sell the bulk of the country's export surplus to the Reich. Bulgarian agricultural and mineral products were paid for in "ASKI" marks, good only in Germany. The result was that Bulgaria was flooded with German manufactures, many of which it did not want. In a letter to the *New York Times* of Dec. 3, 1939, a leading Bulgarian complained that the intensive exports forced upon his country by Germany were destroying its economy and that notwithstanding these exports, the Reich still owed Bulgaria six billion leva "which she has no intention of paying." On the other hand, continued shipments of German arms to Bulgaria aroused the suspicions and fears of Bulgaria's neighbors.

Relations with Other Powers. To create a counterweight to Germany's growing influence, the Sofia Government concluded a cultural and economic treaty with Italy on November 5. For the same reason it encouraged Anglo-French efforts to woo Bulgaria away from the Reich by extending commercial preferences and credits. But an Anglo-French offer to guarantee Bulgaria's independence was rejected. The British and French actively supported efforts by Turkey, Yugoslavia, Greece, and Rumania to induce Bulgaria to join the Balkan Entente (q.v.). Bulgaria, however, demanded the Dobruja from Rumania and Thrace from Greece as the price of its adherence. This price Rumania and Greece were unwilling to pay, and the negotiations were in consequence deadlocked at the year end.

Meanwhile Bulgar-Rumanian relations were worsened by sporadic frontier clashes and by a Bulgarian agitation against alleged Rumanian attacks upon Bulgars in the Dobruja. As a warning to Bulgaria not to resort to armed force Greece, Turkey, and Rumania in September mobilized troops along the Bulgarian frontiers and strengthened their fortifications.

Soviet Role in Bulgaria. At the beginning of the last quarter of 1939, Bulgarian hopes for aid in regaining the lost territories switched from Germany to the Soviet Union. The Soviet Government made overtures toward Bulgaria by sending the Vice Commissar of Foreign Affairs to Sofia in May. In August the first official Bulgarian delegation to visit the Soviet Union since the World War, consisting of a large group of deputies, went to Moscow. There they received the personal assurance of Premier Molotov that the Soviet Union approved Bulgaria's territorial claims upon Rumania. Sofia was one of the few European capitals that greeted the Soviet-German rapprochement with satisfaction. In September Bulgarian missions were sent to the Soviet capital to negotiate agreements for closer commercial and air communications. Meanwhile assurance of Soviet friendship encouraged the Bulgarians to adopt a more independent attitude in trade negotiations with Germany.

Bulgaria's first reaction to the Soviet expansionist policy inaugurated in September was one of relief and hope. Historically Russia had been the friend of Bulgaria and the deep-seated Pan-

Slav sentiment among the Bulgarian peasants and some intellectuals furthered the belief that Russia planned to seize Bessarabia from Rumania and at the same time aid Bulgaria to take the Dobruja.

The expectation that Russian help would not come so high as that offered by Germany soon faded. It was reported late in October that Moscow had refused to support Bulgarian claims on Rumania unless some pro-Soviet ministers were admitted to the Kiosseivanov Cabinet. A new Soviet Minister arrived in Sofia on October 31. The activities of the Soviet Legation, equipped with the largest staff of any foreign diplomatic delegation in Sofia, aroused the fear of the Bulgarian Court circles and the ruling groups that Moscow planned to communize Bulgaria from within and use the country as a base for Soviet domination of the Balkans. Soviet policy in the Baltic States and the aggression upon Finland supported this belief.

In consequence the Bulgarian Government, in November, adopted toward Russia much the same policy as toward Germany. The campaign for territorial revisions by armed force was dropped temporarily and Sofia supported the Balkan Entente's efforts to maintain the neutrality of all the Balkan states in the European war. Sofia students omitted the customary vociferous demonstration against the Treaty of Neuilly upon the 20th anniversary of that treaty (November 27). On November 10 a Bulgar-Turk agreement for partial demobilization and withdrawal of troops from their mutual frontier was announced. Bulgaria, which had been supporting an army of 200,000 men on a war footing at a cost of 1,000,000 leva daily, was reported to have reduced this force to about 120,000 men.

At the same time Bulgaria followed an ostensibly friendly policy toward Russia in order to avoid any pretext for a Soviet invasion. In mid-November *Izvestia*, official organ of the Soviet Government, was placed on sale in Sofia for the first time. On December 24 the Bulgarian Finance Minister and a delegation of financiers and economists went to Moscow to continue the negotiations for a trade and maritime treaty. Repressive measures against Bulgarian Communists were not relaxed, however. And unofficially Bulgarian sentiment revealed itself as increasingly favorable to the Anglo-French cause. Thus Bulgaria at the year end was still sitting on the diplomatic fence, waiting for future developments to determine its course in the European conflict.

See FRANCE, GERMANY, GREAT BRITAIN, GREECE, ITALY, RUMANIA, TURKEY, UNION OF SOVIET SOCIALIST REPUBLICS, and YUGOSLAVIA under *History*; BALKAN ENTENTE.

BUND, GERMAN-AMERICAN. See DIES COMMITTEE; FASCISM. For an account of the prosecution of Fritz Kuhn, see under NEW YORK CITY.

BUREAUS, FEDERAL. See CUSTOMS, BUREAU OF; NARCOTICS; PUBLIC HEALTH; PRISONS; GEOLOGICAL SURVEY; RECLAMATION, BUREAU OF; MINES, BUREAU OF; BIOLOGICAL SURVEY; LIVESTOCK; SOILS; DAIRYING; ROADS AND STREETS; METEOROLOGY; FISHERIES, BUREAU OF; CHILDREN'S BUREAU; WOMEN'S BUREAU; FEDERAL BUREAU OF INVESTIGATION; ENTOMOLOGY, ECONOMIC.

BURMA. A British dependency, formerly one of the British provinces of India. Total area, 261,610 square miles comprising Burma proper, with Chin Hills and Kachin Hills Tracts (192,158 sq. mi.), Shan States (62,335 sq. mi.), and unadmin-

istered territory (7117 sq. mi.). Total population (Dec. 31, 1937 estimate), 15,797,000 compared with (1931 census) 14,667,146 (84.3 per cent Buddhists, 5.2 per cent Animists, 4 per cent Mohammedans, 3.9 per cent Hindus, and 2.3 per cent Christians). Chief cities (1931 populations): Rangoon (capital), 400,415; Mandalay, 147,932. Education (1937-38): 7639 recognized schools and colleges (568,037 students) and 18,436 unrecognized schools (212,975 students).

Production and Trade. Rice, sesamum, maize, jowar (Indian millet), cotton, beans, groundnuts, and grain are the main agricultural products. The area sown in 1936-37 totaled 18,165,172 acres. Irrigated lands totaled 1,477,994 acres. Forest reserves covered 31,339 square miles and the output of teak therefrom in 1936-37, by lessees, amounted to 345,793 tons. Rice (rough) produced from 12,522,900 acres in 1938-39 totaled 8,173,100 metric tons. Burma is rich in minerals, the most important being (1938 production figures, in metric tons) petroleum (1,049,000), lead (88,000), zinc (55,700), tungsten (1900), tin (4100), silver (184), rubies, jadestone, wolfram, gold, and copper. A total of 87,652 were employed during 1939 in the 986 factories of all kinds. In 1938, imports were valued at Rs206,700,000; exports, Rs470,600,000 (rupee averaged \$0.3659 for 1938).

Communications. In 1938 there were 13,421 miles of roads, 2060 miles of railways, and some 60 miles of navigable canals. The great river Irrawaddy (navigable for 900 miles from the sea) and its tributaries (the Chindwin, Shweli, and Myitnge) form an important artery of commerce. A highway links the railhead at Lashio of the Burma railways with the new Chinese highway which runs through Yunnan province to the Chinese capital of Chungking. This provides a new supply route (Rangoon to southwestern China) in place of the blockaded Chinese Pacific ports and the route through French Indo-China over which the transport of munitions was prohibited. Owing to a lack of traffic, the Irrawaddy Flotilla and Airways Ltd., suspended all their seaplane services (Rangoon-Yenangyang and Rangoon-Moulmein-Tavoy).

Finance. For the year ended Mar. 31, 1938, revenue totaled Rs158,400,000; expenditure, Rs145,400,000. Estimates for 1938-39 indicated revenue of Rs158,083,000 and expenditure of Rs154,229,000. Burma's debt to India was calculated to be Rs507,981,000 on Mar. 31, 1937. The annuity required to redeem the principal and interest of this debt in 43 years from 1939-40 amounts to Rs22,456,000 after taking into account the payments made by Burma to India in 1937-38 and 1938-39. In addition, Burma has to pay annually $7\frac{1}{2}$ per cent of the liability of India in respect to central government pensions in force at the date of separation.

Government. The Government of India Act, 1935, provided for the separation of Burma from India on April 1, 1937. Executive power is vested in a governor (appointed by the Crown) who is advised by a council of ministers of not more than 10 members. There is a legislature, having power over Burma's internal affairs, consisting of a senate of 36 members (18 elected by the house of representatives and 18 chosen by the governor) and a house of representatives of 132 members elected by popular suffrage. Large areas in the northern and eastern hill districts were excluded from the legislature's control and placed under the jurisdiction of the governor. Governor, Sir

Archibald D. Cochrane (assumed office on May 8, 1936; reappointment, effective Apr. 1, 1937).

History. Unrest of sections of the population which was marked by rioting (see 1938 YEAR BOOK, pp. 112-113), strikes, and civil disobedience campaigns during 1938, continued into 1939. In Mandalay, on Feb. 10, 1939, in defiance of an order prohibiting a demonstration, 20,000 persons formed into an unruly procession and clashed with the military police who were trying to restore order with the result that 24 people were killed and several were injured. The British Under-secretary of State for India and Burma, in a speech delivered at London on February 16, said that it was hard to name any one predominating cause of the disturbances in Burma and, among other things, added that the situation where a "vast amount of land was in the hands not only of absentee, but alien (Indian) landowners, could not in these days of economic and nationalist thought fail to give rise to common difficulties." A new coalition cabinet headed by U Pu succeeded that of Dr. Ba Maw at the end of February. Hindu-Moslem riots broke out in Rangoon early in March and a number of persons were killed or injured. Soldiers and military police patrolled the street to restore order.

The committee set up by the Burma government to inquire into the causes of the 1938 riots, in a report issued during April, 1939, found that while the re-publication of an offensive attack on Buddhism started the outbreaks, the underlying causes were social, economic, and political. It emphasized the misbehavior of a large minority of Buddhist monks who played a leading part in the disturbances. Some of the recommendations of the committee were: That the whole question of the Indians in Burma should be re-examined; the recommendations of the land and agricultural committee should be taken to heart by the government with the object of restoring the former prosperity and contentment of the peasantry; the state of the police to be examined by a competent commission; stricter control of the vernacular press (the committee noted the astonishing credulity of the masses who swallowed the most fantastic tales of Indian attacks on Buddhist temples and the poisoning of groceries by Indian shopkeepers). The committee urged "the need to establish and define once and for all the relations of the monks and the state," and pointed out that the rule of law must be recognized as a necessary condition of progress if Burmese Buddhism is to retain its influence for good, because, Burma "has now become a democracy in which superstition is no substitute for thought and ideals must be enforced by reason."

The movement for greater self-government was further stimulated in 1939 by the outbreak of the European War and the Indian National Congress's demand for independence (see INDIA under *History*). A group of Burmese political leaders, in a letter to the British Governor, asserted that Burma deserved and was capable of assimilating "a larger measure of reform than India." The Governor replied on November 7 that Burma's problems were different from those of India, but that the British Government did not consider them to be insurmountable obstacles to Burma's ultimate attainment of "her due place in the British Commonwealth of Nations."

This statement was attacked as vague and unsatisfactory by the Burmese press and some political leaders, who pointed out that it did not

go as far as the British promise of dominion status to India after the European war. After further consultations, the Governor stated officially on November 24 that the British Government recognized that the natural outcome of Burma's constitutional progress would be the attainment of dominion status.

Relations between China and Burma assumed importance during 1939 as a result of the opening of the Chinese military supply highway connecting the Burmese border with Chungking. The Chinese Minister of Communications conferred with Burmese officials in Rangoon in May and in December the visit was returned by the defense secretary and the director general for posts and telegraphs for Burma, both Britons. In addition, an unofficial Burmese goodwill mission comprising delegates of leading Burmese civic organizations, arrived in Chungking by air on December 12.

BURYAT-MONGOLIAN REPUBLIC.
See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

BUSCH BECERRA, GERMÁN. President of Bolivia, died at La Paz, Aug. 23, 1939. Born at San Javier, Santa Cruz, Mar. 23, 1904, he was educated at the Colegio Nacional "6 de Agosto" of the Department of Beni and at the Military College of La Paz (1922-26). Entering the army, he was promoted to lieutenant in 1931, captain in 1932, and major in 1933, becoming aide to the commander-in-chief of the Bolivian forces in the Chaco. In 1934 he became chief of the General Staff of the First Army Corps.

One of the heroes of the Chaco War, Colonel Busch led a bloodless coup d'état against the Sorzano Government on May 17, 1936 and placed in the presidency, Col. David Toro, another of the Bolivian heroes of the Chaco War. A year later—July 14, 1937—Toro was ousted and Busch chosen as his successor. He announced that his Government would follow a "middle of the road" policy, and on August 1 he restored the 1880 Constitution and called for elections to the National Assembly. On May 27, 1938 the newly elected Assembly elected him constitutional president for a six-year term. Although he attempted his reforms of the government through constitutional methods, he gradually veered to a dictatorship of the "right" and in April, 1938 he outlawed "all Communist, Anarchist, and Bolshevik activity," and on April 24, he suspended the Constitution, assumed a "totality of power," and became the dictator of Bolivia. On Aug. 23, 1939, it was announced that he had committed suicide.

During his regime, he undertook the reform of the economic and financial fields by a three-point program, which called for the revision of the rates of exchange, the establishment of an Agricultural Bank, and the balancing of the budget; the cancellation of the Standard Oil Petroleum concession was approved and the Treaty of Peace, Friendship, and Boundaries, which ended the Chaco dispute, was signed on July 21, 1938; treaties were signed with Argentina, Brazil, Chile, and Peru. See BOLIVIA under History.

BUSES. See AUTOMOBILES.

BUSINESS REVIEW. Business activity in the United States during 1939 passed through three distinct phases. First, there was a decline from the high level of production of December, 1938, which continued until the late spring. The adjusted index of industrial production of the Federal Reserve Board, which was 104 in December, dropped to 92 in April and May. The recession,

which resulted in part from the concentration of public works and other Government spending activities late in 1938, was intensified in its later phases by a protracted coal strike. Business conditions entered upon a new phase beginning with June, when the recovery that started in the middle of the year before was resumed as the high level of retail trade and building activity led to an expansion of orders for primary industries. This gradual recovery, which brought the adjusted index of industrial production back to 103 in August, was followed by a spectacular upturn immediately following the outbreak of the war in Europe. The last three months of 1939 was the most prosperous quarter on record, in terms of the adjusted index of industrial production of the Federal Reserve Board, except for the second and third quarters of 1929.

The beginning of the war in Europe did not stimulate American business directly to any significant extent. Export trade was affected relatively little. Rather, the war stimulated industrial activity indirectly because it led to a widespread forward buying movement on the part of manufacturers, distributors, and consumers generally. Remembering the sharp price advances and the interruptions in delivery which accompanied the World War, a rush to buy goods developed during September which did not abate materially until near the end of the year. Industry thus built up large backlogs of unfilled orders which caused most lines of manufacturing to operate around capacity levels right through the final months of the year, when usually there is a seasonal recession in activity. Hence, the adjusted index of industrial production in December reached 128, which surpassed the previous monthly peak of 125 reached in June, 1929, for the first time.

The primary stimulus to business thus became forward buying, and government spending to promote recovery became a less important factor. In fact, some curtailment in relief outlays occurred during the latter part of the year, in contrast with the expansion of Federal pump-priming expenditures late in 1938, and the upturn in residential construction, while it continued through the year, assumed a much slower pace.

The course of business activity during 1939, with comparisons with previous years, was reflected in the adjusted index of industrial production of the Federal Reserve Board as follows:

INDEX OF INDUSTRIAL PRODUCTION FEDERAL RESERVE BOARD

[Adjusted for seasonal variations; monthly average 1923-25 = 100]

Months	1934	1935	1936	1937	1938	1939
January	78	90	97	114	80	101
February	81	89	94	116	79	99
March	84	88	93	118	79	98
April	86	86	101	118	77	92
May	86	85	101	118	76	92
June	84	87	104	114	77	98
July	76	86	108	114	83	101
August	73	88	108	117	88	103
September	71	91	109	111	90	111
October	74	95	110	102	96	121
November	75	96	114	88	103	124
December	86	101	121	84	104	128

Annual Indices (unadjusted)

1922	85	1928	111	1934	79
1923	101	1929	119	1935	90
1924	95	1930	96	1936	105
1925	104	1931	81	1937	110
1926	108	1932	64	1938	86
1927	106	1933	76	1939	105*

* Preliminary.

Despite the fact that the primary stimulus to the upturn came from the beginning of the war in Europe, the acceleration in activity made itself manifest in virtually all lines of business. Not only the armament industries, but practically every major industry in both producers' goods and consumers' goods fields received a flood of orders from buyers who feared higher prices or delivery delays because of the war. Industries that consume steel, for example, feared that armament orders might book steel manufacturing companies so far ahead that they would not be able to serve their regular customers on schedule. Hence, even where price increases were not feared, buyers bought freely to cover future requirements. Because industry generally had become accustomed to hand-to-mouth buying policies, particularly following the 1937-38 recession, this change was particularly marked. Only in the final weeks of the year, when it became apparent that belligerent countries would seek to hold their purchases from the United States to a minimum, in order to conserve foreign exchange, did buying policies again take a more conservative turn.

The volume of production of six major industries, with comparisons with previous years, is shown in the following table:

INDICES OF ACTIVITY IN CHIEF INDUSTRIES

	<i>Iron and steel</i> ^a	<i>Bituminous coal</i> ^a	<i>Freight car loadings</i> ^a	<i>Construction</i> ^a	<i>Automobiles</i> ^a	<i>Electric power</i> ^b
1929	130	102	107	117	135	105.2
1930	94	89	92	92	85	99.7
1931	60	73	74	63	60	95.0
1932	31	59	55	28	35	85.7
1933	53	64	58	25	48	88.4
1934	60	69	62	32	69	91.5
1935	79	71	64	37	99	94.3
1936	110	84	75	55	112	101.3
1937	118	85	78	59	121	104.9
1938	66	66	62	64	62	94.9
	<i>1938 = 1939</i> ^a	<i>1938 = 1939</i> ^a	<i>1938 = 1939</i> ^a	<i>1938 = 1939</i>	<i>1938 = 1939</i> ^a	<i>1938 = 1939</i> ^b
January	52 93	65 75	65 69	52 86	65 105	94.3 98.3
February	50 88	64 79	62 67	51 73	61 98	94.3 97.8
March	49 83	58 77	60 66	46 69	54 91	92.0 98.3
April	50 79	62 31	57 60	52 67	54 87	90.6 99.2
May	47 73	57 46	58 62	51 63	49 73	91.1 97.5
June	46 89	57 71	58 67	54 63	46 81	91.7 101.1
July	62 100	60 75	61 69	59 67	43 87	94.4 101.2
August	70 105	64 77	62 70	66 73	45 89	96.5 101.1
September	76 121	71 84	64 77	78 73	46 85	97.1 104.3
October	90 157	72 94	68 80	82 76	84 78	97.9 106.7
November	108 167	77 91	69 82	96 83	96 90	98.9 106.0
December	101 173	78 83	69 78	96 87	99 124	99.3 106.6
Year	82 111	64 74	62 70	64 72	62 91	94.9 101.5

^a Board of Governors of Federal Reserve System (adjusted for seasonal variations), monthly average 1923-25 = 100.

^b Monthly average of *Annalist* (computed normal = 100).

Industry. Construction. As is usually true of a period of expanding business, the durable goods industries enjoyed the widest gains. New construction, which assumed the leadership in the upturn from the 1937-38 recession during the previous year, again enjoyed wide gains. Public works activity reached a peak early in the year and then declined, but residential construction, including the extensive slum clearance program of the United States Housing Authority, continued at a high level through 1939. Furthermore, later in the year building by public utilities and industrial concerns increased sharply, after having remained at a low ebb for a number of years. The value of new contracts for both residential and non-residential building in 1938 and 1939 is shown month by month in the table under BUILDING.

Iron and Steel. The iron and steel industry operated at virtual capacity levels during the final months of the year. Expectations of a general

price increase, which did not materialize, stimulated buying and gave the steel companies large backlogs of unfilled orders which they could not complete by the end of the year. On the other hand, concessions to foreign buyers and to large domestic consumers which had been available before September disappeared, so that the steel companies did obtain a materially higher average price for their products. See IRON AND STEEL.

Automobile. The automobile industry realized the increase in sales it had confidently expected for 1939. Following the sharp decline in car buying during 1938, a deferred replacement demand had been built up which brought a favorable reception for both 1939 and 1940 model automobiles. Production of cars and trucks in the United States and Canada during 1939 aggregated 3,710,000 cars and trucks, which compared with 2,655,171 cars and trucks in 1938 and 5,016,000 units in 1937, which was the best year since 1929. The only untoward development for the year was the strike which closed down the Chrysler Corporation plants from the opening of the new model season to early in December. The end of the year found the industry in a healthy position as regards inventory and demand prospects. See AUTOMOBILES.

Other Industries. Consumer goods industries, under the leadership of textiles, similarly rose to peak levels. An increase of approximately 100 per cent in the price of silk, due to reduced supplies from the Orient and increased consumption within Japan because of restrictions on cotton goods use within the country, brought a further shift in demand from silk to rayon textiles. Other important shifts in demand were noted during the latter months of the year as a result of sharp price advances in particular markets due to the war. For example, the huge demand for burlap from Great Britain, to make sandbags for defense purposes, caused consumers in this country to shift largely to cotton and heavy paper bags.

Only a few industries were affected adversely by the outbreak of the war. The motion picture industry particularly was hurt because of the extensive market it has built up abroad, especially in Europe. Hence, it became necessary for the

leading motion picture companies to curtail expenses late in the year to offset the anticipated loss in revenue from Europe.

Production and price data of a number of leading industries for 1939, with comparative 1938 figures, are presented in the following table:

trial payrolls account for 20 to 25 per cent of the total national income paid out, even a sharp rise in manufacturing and mining activity may bring only a modest expansion in the amount of national income paid out, and therefore in purchasing power in the hands of the entire popu-

Flour Milling ¹		Cotton Textiles ²			Copper Refining ³ from Domestic Ores		Petroleum Refining ⁴		
Output (bbls.)	Wheat Price (\$ per bu.)	Con- sump- tion (1,000 bales)	Spindle Activity (million spindle hours)	Cotton Price (spot \$ per lb.)	Pro- duction (tons)	Price (\$ per lb.)	Production Gasoline (1,000 bbls.)	Fuel Oil (1,000 bbls.)	Crude Oil Price (bbl., K-O 36 gravity)
1939	72,960,991	63.6	7,367	92,500	8.6	818,289	11 07	607,941	307 ½
1938	66,697,097	66.1	5,905	75,961	9.0	638,076	10.10	569,070	295
Tires ⁵		Paint ⁶		Shoes ⁷		Tobacco ⁸			
Pro- duction (1,000 units)	Rubber Price (lb. N. Y.)	Sales (1,000 dollars)	Linseed Oil Price (\$ per lb. N. Y.)	Pro- duction (1,000 pairs)	Av. Price	Hide Price (\$ per lb.)	Production Cigarettes Billions	Smoking Tobacco (million lbs)	Price Cured Burley
1939	56,975 ½	17.66	\$379,277	9.0	419,500	\$1.75	11.97	172.4	6,528
1938	40,184	14 68	\$353,209	8.6	390,746	\$1.74	10.22	163 7	6,368
Furniture ⁹		Motion Pictures ¹⁰		Radio ¹¹		Aircraft ¹²			
Production	Costs of Production	Number of Features	Number	Set Sales	Value	Total Apparatus Sales	(Except domestic military)		
1939	\$405,000,000	\$165,000,000	455	9,000,000	\$289,000,000	\$374,600,000	9 Months	3,752	
1938	\$345,000,000	\$165,000,000	596	7,100,000	\$250,000,000	\$350,000,000	Year	3,535	
							9 Months	2,873	

½ Preliminary. ¹ Northwestern Miller & American Baker; price (farm) U.S. Department of Agriculture. ² U.S. Bureau of Census—price average of 12 monthly average 10 Southern Markets. ³ Copper Institute—price American Metal Market. ⁴ U.S. Bureau of Mines—price Journal of Commerce, Kansas-Oklahoma 36 gravity. ⁵ Rubber Manufacturers Association. ⁶ U.S. Department of Commerce, price Journal of Commerce, average of weekly price. ⁷ Tanners Council—price Commodity Exchange, Light Native Cows, Chicago. ⁸ Treasury—Tax Collections report—Price Dept. of Agriculture—The Tobacco Situation. ⁹ Seidman & Seidman—Furniture Industry Bulletin. ¹⁰ Film Daily Yearbook. ¹¹ Radio Today. ¹² Survey of Current Business.

Minerals. Minerals production during 1939 kept pace with the upturn in manufacturing during the final months of the year. Bituminous coal mining was stimulated by an expansion of coal piles on hand by industrial consumers, as well as by the upturn in consumption due to increased manufacturing activity. The expected increase in coal export demand due to the war in Europe did not materialize to any important degree, however, because Canada and Latin American markets continued to receive large amounts of coal from western Europe. Crude petroleum production registered a gain for the year, but this was due to an expansion of domestic requirements, rather than an enlargement of exports because of the war.

Indices of minerals production computed by the Federal Reserve Board monthly compared during 1938 and 1939 as follows:

lation. Other major component elements of the aggregate consumer income, such as farm income and interest and dividend payments, showed a much more moderate increase for the year than did industrial payrolls.

Estimates of monthly income payments in the United States for 1938 and 1939, prepared by the Department of Commerce, were as follows:

MONTHLY INCOME PAYMENTS*

[Million Dollars]

	1938	1939	1938	1939
January	5,671	5,703	July	5,481
February	5,126	5,247	August	5,162
March	5,369	5,727	September	5,637
April	5,524	5,654	October	5,886
May	5,186	5,432	November	5,507
June	5,557	5,918	December	6,145
			Year	66,271
				69,700

* Department of Commerce.

INDICES OF MINERAL PRODUCTION

Bituminous Coal		Anthracite Coal		Crude Petroleum		Iron Ore		Zinc		Lead		Silver	
1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939	1938	1939
January	65	75	67	69	177	171	—	98	89	69	70	96	86
February	64	79	53	61	171	169	—	90	87	67	73	96	100
March	58	77	45	61	172	173	—	87	90	64	69	98	86
April	62	31	45	80	170	174	—	80	91	74	71	96	101
May	57	46	64	73	156	175	19	55	79	89	60	82	92
June	57	71	59	153	170	34	67	70	90	64	70	91	107
July	60	75	47	53	161	174	38	74	69	91	54	68	99
August	64	77	38	53	167	127	37	78	74	93	46	71	105
September	71	84	50	71	158	174	41	97	75	98	50	71	102
October	72	94	49	58	161	187	50	128	80	110	50	70	102
November	77	91	57	60	165	187	42	155	88	117	66	83	91
December	78	83 ½	67	59 ½	169	186 ½	—	—	94	121 ½	57	78 ½	85
Year	66	74	56	63	165	172	37	93	82	97	60	73	93

½ Preliminary

Distribution. As usual, the increase in retail trade for 1939 was much more moderate than the rise in industrial activity for the year. This discrepancy results from the fact that retail distribution reflects the whole national income, rather than industrial production. Since indus-

An unusual factor affecting retail trade during the important year-end holiday shopping season was the advance in the date of the Thanksgiving Day (q.v.) holiday by one week, in an effort to lengthen the pre-Christmas shopping season. The experiment completely failed to achieve the de-

sired effect, as retail sales dropped below the level of the year before in the final week in November. The fact that many States insisted upon proclaiming the final Thursday of November as Thanksgiving Day and unseasonably warm weather which prevailed largely affected retail trade at the time. During December, a marked spurt in sales occurred, and holiday trade for the nation as a whole was very nearly of record proportions.

The Federal Reserve Board's report of department store sales and inventories compared as follows with that for 1938:

INDICES OF MONTHLY DEPARTMENT STORE SALES AND STOCKS

[1923-25 = 100, adjusted for seasonal variation]

	1938		1939	
	Sales	Stocks	Sales	Stocks
January	90	71	88	67
February	88	70	87	68
March	86	70	88	68
April	83	69	88	67
May	78	69	85	66
June	82	68	86	67
July	83	67	86	67
August	83	67	89	67
September	86	67	91	68
October	84	67	90	69
November	89	67	95	71
December	89	66	96	68
Year	85	68	90	68

Commodity Prices. Although a sharp spurt occurred in commodity prices in September and October, following the outbreak of the European war, by the end of the year the level of wholesale commodity prices was only back to the average of the preceding six years. Following the initial war advance, in fact, a considerable setback occurred in a number of markets, and thereafter prices fluctuated irregularly without much change in the average until the end of the year. While wheat was strengthened by the drought in the West and prospects for an exceedingly small crop in 1940, and silk rose sharply because the restrictions upon cotton use caused a substantial rise in domestic consumption of this fiber within Japan, quotations turned soft in a number of other commodity markets in the closing weeks of the year.

By and large, the behavior of the markets in a year when another major war broke out in Europe and bank deposits rose to unprecedentedly high totals within this country demonstrated that there are powerful forces which tend to stabilize commodity quotations around this level. The most important of these is the ability of many industries to expand production readily to meet increased demand. A contributing factor has been the government's agricultural program, under which prices of a number of commodities are virtually stabilized through making loans to growers and through purchases of surplus supplies in the open market for relief distribution.

A significant development was the relative stability of manufactured goods prices during the final months of the year, when the wholesale price level was advancing. A number of manufacturers favor holding their selling prices stable as long as possible, even when raw materials are rising, in order to sustain sales volume. Some feared to increase prices of manufactured goods because it might lead to new wage increase demands from organized labor. In addition, the Federal government, through various official pronouncements, made clear its opposition to higher prices for manufactured goods, and the hearings before the Temporary National Economic Committee were

utilized to supplement this official pressure against higher prices. A test of price policy occurred in the steel industry, where a number of producers favored price increases while others opposed them because it was felt that wage increase demands would follow inevitably and because it was desired to avoid a conflict with the government. When it was announced that finished steel prices would be left virtually unchanged for the first quarter of 1940, it was apparent that the advocates of price stability had triumphed.

The index of wholesale prices of the Bureau of Labor Statistics fluctuated as follows during the year:

WHOLESALE PRICE MOVEMENT [1926 = 100]

	Combined Index		Form Products		Foods		Other Commodities	
	1929	1930	1931	1932	1933	1934	1935	1936
January	95.3	104.9	99.9	91.6	85.2	75.0	70.2	71.2
February	86.4	88.3	90.5	85.2	75.0	70.2	71.2	71.2
March	73.0	64.8	74.6	61.0	60.5	60.5	78.4	77.9
April	64.8	48.2	61.0	70.2	71.2	78.4	77.9	79.6
May	65.9	51.4	60.5	71.2	78.4	77.9	79.6	85.3
June	74.9	65.3	70.5	78.4	77.9	79.6	85.3	81.7
July	80.0	78.8	83.7	79.6	85.3	81.7	85.3	81.7
August	80.8	80.9	82.1	79.6	85.3	81.7	85.3	81.7
September	86.3	86.4	85.5	85.3	81.7	85.3	81.7	81.7
October	78.6	68.5	73.6	81.7	85.3	81.7	85.3	81.7
November	78.6	68.5	73.6	81.7	85.3	81.7	85.3	81.7
December	78.6	68.5	73.6	81.7	85.3	81.7	85.3	81.7
Year	78.6	68.5	73.6	81.7	85.3	81.7	85.3	81.7

	Combined index		Farm products only	
	1938	1939	1938	1939
January	80.9	76.9	71.6	67.2
February	79.8	76.9	69.8	67.2
March	79.7	76.7	70.3	65.8
April	78.7	76.2	68.4	63.7
May	78.1	76.2	67.5	63.7
June	78.3	75.6	68.7	62.4
July	78.8	75.4	69.4	62.6
August	78.1	75.0	67.3	61.0
September	78.3	79.1	68.1	68.7
October	77.6	79.4	66.8	67.1
November	77.5	79.2	67.8	67.3
December	77.0	79.1	67.6	67.6
Year	78.6	77.1	68.6	65.4

Reflecting the stable trend in wholesale prices of most manufactured goods, the retail price level was relatively stable during the year, except where particularly sharp increases in raw material prices, as in silk, forced advances. The increased stability of wage rates also helped to keep retail prices on an even keel. The movement of major groups of retail prices during 1939, compared with 1938, was as follows, according to the cost of living indices compiled by the National Industrial Conference Board:

INDICES OF RETAIL PRICES [1923 = 100]

	Food		Clothing		Fuel and Light		Total Cost of Living	
	1938	1939	1938	1939	1938	1939	1938	1939
Jan.	82.0	79.2	76.7	72.7	86.3	85.9	87.5	85.4
Feb.	80.1	78.4	76.0	72.4	86.3	85.9	86.7	85.1
March	80.3	78.0	75.5	72.3	86.2	85.8	86.7	84.9
April	81.1	78.2	75.1	72.2	85.7	85.2	86.8	85.0
May	80.8	78.1	74.5	72.1	83.7	84.0	86.5	84.8
June	81.9	77.9	73.9	72.0	83.7	83.4	86.7	84.7
July	81.7	78.1	73.5	71.9	84.1	83.8	86.5	84.9
Aug.	80.1	76.7	73.4	71.9	84.4	84.0	85.9	84.5
Sept.	80.4	80.7	73.3	72.2	85.0	84.4	85.9	85.9
Oct.	79.8	80.1	73.2	72.6	85.6	85.2	85.8	85.8
Nov.	79.5	79.6	73.2	72.9	85.9	85.6	85.6	85.7
Dec.	80.3	78.5	73.0	72.9	86.0	85.6	85.8	85.3
Year	80.7	78.6	74.3	72.3	85.2	84.9	86.4	85.2

Industrial Earnings. Several favorable factors brought a sharp increase in industrial earnings for 1939. The most important of these was the greatly increased sales volume due to the acceleration of business activity and the accumu-

lation of inventories in the final months of the year. A second factor was the additional gain in productive efficiency registered in many lines, and the stability of wage rates. The firmer trend of commodity prices prevented inventory losses for the year, while price increases in raw material industries added to profits reported. As is usually the case, the widest increases in profits were shown by enterprises in industries where overhead costs are relatively large, so that a greater volume of sales does not bring a corresponding increase in expenses. Prominent among such industries were the railroads, iron and steel manufacturing and some branches of the mining industry. Many oil companies showed moderately smaller earnings because of keener competition in the sale of refined products, with consequent price-cutting, particularly during the first half of the year.

Failures and Reorganizations. Business failures were fewer in number during 1939, as is usual during a period of improving business. The facts that the price trend was rising also and that many marginal enterprises had been weeded out during the 1938 recession contributed to the decline in the number of failures. The monthly record as reported by Dun & Bradstreet was as follows:

COMMERCIAL AND INDUSTRIAL FAILURES IN
THE UNITED STATES*

Month	Number	1938	Number	1939
		Liabilities (thous. of dollars)		Liabilities (thous. of dollars)
January	1,377	21,415	1,263	19,122
February	1,149	21,028	963	12,788
March	1,167	40,325	1,057	17,851
April	1,172	21,147	1,064	17,435
May	1,123	19,139	1,028	14,664
June	1,073	15,918	847	11,460
July	1,038	14,761	885	14,128
August	1,015	16,382	859	11,259
September	866	14,341	758	9,402
October	997	13,219	916	16,140
November	984	12,302	886	11,877
December	875	36,528	882	12,074
Total for year	12,836	246,505	11,408	168,204

* Dun's Review.

In the field of corporate reorganization, the outstanding development of the year was the endorsement by the United States Supreme Court of the doctrine of "absolute priority" as the principle that should underlie reorganization plans. In the Los Angeles Lumber Company case, the U.S. Supreme Court held that senior claims against a debtor corporation should be covered fully with bonds or stock of the reorganized company before recognition is given to junior claims or capital stock. This decision is expected to expedite the reorganization of the many railroads now in process of financial readjustment, but actually progress on pending cases was quite slow during the year, and the Interstate Commerce Commission promulgated very few final plans under Section 77 of the Bankruptcy Act. Congress accorded relief to the Baltimore & Ohio and Lehigh Valley Railroads by enacting Chapter 15 of the Bankruptcy Act, which provides for a modification of indebtedness for railroads but limits the use of this simplified procedure to a brief period ending July 31, 1940. Progress was quite slow also on pending simplifications and integrations of public utility holding companies under the Public Utility Holding Act of 1935, owing to the failure of the

Securities and Exchange Commission to lay down principles to guide such readjustments.

World Business Trends. Business activity throughout the world was largely affected during the year by the intensive preparations for war which marked the first eight months and the hostilities which began in Europe at the beginning of September. With world armament expenditures running at an estimated rate of some \$20,000,000,000 annually, the demand for materials and supplies that enter into the production of war materials was stimulated even before the war began. At the same time an increasing measure of government control over business was found necessary in most countries, especially those which subsequently became involved in the war.

After the war started, several new influences made themselves apparent in world economic developments. In the first place, government regimentation of economic activity was further extended, in the belligerent countries to help win the war and in neutral countries to cushion their economies against the effects of the conflict. The destruction of shipping made it necessary for European nations generally to limit their imports of non-essentials, while Great Britain and France embarked upon a policy of increasing their imports from neutral European nations in order to reduce the supply of goods available for sale to Germany. At the same time, Great Britain and France sought to concentrate their overseas purchases within their own empires as far as possible, so as to conserve foreign exchange for future needs. The economic blockade of Germany largely cut that country off from the rest of the world. To facilitate these ends, Great Britain and France agreed upon a program of the closest economic and financial collaboration, which was hailed as a step toward an eventual European federation of nations.

Particular efforts were made in Great Britain and France to avoid an inflationary price rise because of heavy government purchases to finance the war, through rationing commodities and discouraging consumption as far as possible. It was recognized that an increase in the volume of goods absorbed by the government would have to be offset by a reduction in ordinary consumption, to avoid a competitive bidding up of prices of commodities. A large measure of success attended these efforts initially, although questions arose as to whether this program could be carried out equally successfully in the event of a protracted and far more destructive war.

The speed and relative efficacy of the economic control measures that were adopted both in belligerent and neutral countries during 1939 compared quite favorably with those that were put into effect in the earlier stages of the World War, which were frequently ill-advised and were often put into force long after the need for them first became apparent.

A review of the agricultural situation is to be found under AGRICULTURE and of labor under LABOR CONDITIONS. See also BANKS AND BANKING; FINANCIAL REVIEW; IMPORTS AND EXPORTS; LIVING COSTS AND STANDARDS; MARKETING; SECURITY MARKETS; and separate articles on products and on branches of industry, as ADVERTISING, AUTOMOBILES, BOOK PUBLISHING, BUILDING, ELECTRICAL INDUSTRIES, FASHION, GARMENT INDUSTRY, INSURANCE, MACHINERY, PRINTING AND PUBLISHING, RAILWAYS.

JULES I. BOGEN.

BUTLER, PIERCE. An American jurist, Associate Justice of the Supreme Court of the United States, died in Washington, Nov. 16, 1939. Born in Dakota Co., Minn., Mar. 17, 1866, he was educated at Carleton College (B.S., 1887) and in the following year was admitted to the Minnesota bar. His first political office was as an assistant county attorney in 1891, and two years later he was elected county attorney of Ramsey County, Minn. He held this post until 1897. From 1899 to 1905 he was general attorney for the Chicago, St. Paul, Minneapolis, and Omaha Railway. Thereafter he entered private practice but continued his association with railroad law.

He became known as one of the country's ablest railroad lawyers and was counsel for the Southern Pacific Railway (1905), one of counsel for the shareholders in the arbitration at Toronto under the Canadian Northern Railway acquisition act (1917-18), counsel for the Dominion in the arbitration at Montreal under the Grand Trunk Railway System Acquisition Act, and counsel in the Toronto Railway arbitration (1922). During 1913-18 he served as a member of the committee of counsel on the President's Conference Committee for Federal Valuation of Railroads. In addition to his work in connection with railroads, Mr. Butler was counsel for the United States in the celebrated bleached flour case and in prosecuting meat companies under the Sherman anti-trust laws (1910).

On Nov. 23, 1922, Mr. Butler was nominated by President Harding for the Supreme Court. His appointment was confirmed by the Senate, Dec. 21, 1922 and on Jan. 2, 1923 he took his seat in the court. One of Mr. Butler's better-known written decisions was in the Teapot Dome Case (1927). A staunch defender of conservative legislation, he came into conflict with the Roosevelt Administration over its emergency and reform legislation, voting against the constitutionality of all such legislation, from the original gold devaluation case to the refunding of the Agricultural Adjustment Act taxes. With the rest of the Court he helped to invalidate the National Recovery Act, but subsequently when the Court became more liberal in its interpretations, Justice Butler remained with the conservative bloc.

Up to June, 1937, he had cast 17 votes against the Administration and 10 in its favor. In the next term he dissented 20 times, and in the term of 1939 he dissented 32 times. He wrote the majority opinion when he found for the court that compulsory military training in land-grant colleges was constitutional (1934); the decision refusing citizenship to Rozsika Schwimmer, a Hungarian pacifist; the majority opinion holding the N. Y. State Minimum Wage Law for Women, holding it at variance with the Constitution, and also wrote the majority opinion refusing to grant a rehearing, which decision caused a storm of protest. He dissented in the cases of the Washington State Minimum Wage Law for Women, the Tennessee Valley Authority; the Jones & Laughlin, Fruehauf and Friedman; the unemployment features of the Social Security programme; the Scottsboro Negroes, and was in the minority when the National Labor Relations Act was upheld on appeal.

True to his own beliefs as to the proper administration of the law, Justice Butler brought to the court his wide legal experience in the field of railroad law, although he was careful not to

take part in any decisions connected with railroads with which he had once been associated. He served as a member of the Board of Regents of the University of Minnesota during 1907-24 and in 1929 was appointed a member of the advisory committee of the Harvard University Institute of Comparative Law.

BYELO RUSSIAN SOVIET SOCIALIST REPUBLIC. Same as **WHITE RUSSIAN SOVIET SOCIALIST REPUBLIC.**

CABOT, RICHARD CLARKE. An American physician and educator, died in Cambridge, Mass., May 8, 1939. Born in Brookline, Mass., May 21, 1868 he was educated at Harvard University (A.B., 1889; M.D., 1892). Dr. Cabot was associated with the Massachusetts General Hospital from 1894, founding in 1905 a social service department there, and serving as chief of the medical staff during 1912-21; and with Harvard Medical School as assistant (1899-1903), instructor in medicine (1903-08), assistant professor (1908-19), and professor of clinical medicine (1919-33), retiring as emeritus in 1934. He gave the Josiah Royce course in logic at Harvard University (1903-04) and was professor of social ethics there from 1920 to 1934.

During the World War, Dr. Cabot saw service with the U.S. Army in France and while in Paris in 1918 delivered a series of lectures at the Sorbonne which were later published under the title *Essais de Medicine Social*. A fellow of the American Academy of Arts and Sciences, he was president of the National Conference of Social Work in 1931 and in that year received the gold medal of the National Institute of Social Sciences.

One of the foremost medical men in the country, he served as a consultant at many hospitals, contributed a column to the *Boston Herald*, and published a number of books, one of the best known being *What Men Live By* (1914). Other of his works were: *Clinical Examination of the Blood* (1896; 5th ed., 1904); *Physical Diagnosis* (1901; 10th ed., 1930); *Social Service and the Art of Healing* (1909; 2d ed., 1928); *Differential Diagnosis* (vol. i, 1911, 4th ed., 1919; vol. ii, 1915, 3d ed., 1924); *Layman's Handbook of Medicine* (1916; rev., 1937); *Facts on the Heart* (1926); *Adventures on the Borderland of Ethics* (1926); *The Meaning of Right and Wrong* (1933), and *Christianity and Sex* (1937).

CADMIUM. Obtained as a by-product of zinc smelting, production of this metal varies with the output of zinc. And since its primary use in recent years has been for bearings in high-speed internal combustion engines, the fortunes of the industry are closely linked to those of automobile manufacture. This factor, among others, made 1938 the worst year in the history of the cadmium business. In marked contrast to the preceding three years consumption fell off abruptly and prices declined.

United States production in 1939 is estimated by the Bureau of Mines at 4,100,000 lb. (4,184,000 lb. in 1938) with sales about 4,800,000 lb. (3,748,000). Principal cadmium compounds produced in 1939 were cadmium sulphide, cadmium oxide, and cadmium lithopone. Consumption of cadmium in these compounds is estimated at 670,000 lb.

The average price of the metal in 1938, according to *Engineering & Mining Journal*, was 98¢ per lb., compared with \$1.22 in 1937. Decline in prices continued through 1939 until mid-year, when they rose again, closing the year at 75¢ per lb. These are producers' prices to industrial users.

Platers' prices for patented shapes were slightly higher, although the spread between the two has been narrowing.

Principal countries producing cadmium are, in order of importance: United States, Belgium, Germany, Canada, and Australia. Production in 1939 was ample for all needs at current prices.

H. C. PARMELEE.

CALIFORNIA. Area and Population. Area, 158,297 square miles; included (1930) water, 2645 square miles. Population: Apr. 1, 1930 (census), 5,677,251; July 1, 1937 (Federal estimate), 6,154,000; 1920 (census), 3,426,861. Sacramento, the capital, had (1930) 93,750; Los Angeles, 1,238,048; San Francisco, 634,394; Oakland, 284,063.

Agriculture. California harvested, in 1939, 5,378,000 acres of the principal crops. By groups, the fruit crops brought approximately a third of the return upon culture of the soil, the truck crops came next, then the annual grains and seeds, followed by hay, the ground crops, and cotton. Among leading specific crops, oranges amounted to 38,860,000 (indicated) boxes (estimated farm value, \$39,765,000); lemons, 10,650,000 boxes (\$18,638,000); grapes, 2,173,000 tons (\$29,793,000); pears, 10,334,000 bushels (\$6,101,000); peaches, 23,711,000 bu. (\$11,690,000); tame hay, on 1,484,000 acres, 4,184,000 tons (\$37,238,000); barley, 1,234,000 acres, 30,850,000 bu. (\$12,638,000); dry beans, 329,000 acres, 3,990,000 100-lb. bags (\$14,816,000); wheat, 586,000 acres, 10,548,000 bu. (\$8,122,000); rice, 120,000 acres, 9,000,000 bu. (\$6,120,000); cotton, 327,000 acres, 450,000 bales (\$20,475,000); potatoes, 74,000 acres, 22,644,000 bu. (\$13,134,000); sugar beets, 166,000 acres, 2,628,000 tons (for previous year, 1938, value of crop was estimated as \$10,352,000).

Manufacturing. Manufacturing establishments in California numbered 10,861 in 1937 (in 1935, 10,345) and employed 302,189 wage-earners (in 1935, 239,101); they paid \$389,132,068 in wages (in 1935, \$265,645,033) and produced goods to the value of \$2,899,865,426 (in 1935, \$2,141,989,850), to which they contributed by manufacture \$1,091,596,748 (in 1935, \$808,129,891). Canned and otherwise prepared fruits and vegetables, pickles, etc., were produced to the value of \$219,438,652; products of the refining of petroleum attained \$356,097,585; products of lumber approximated \$100,000,000. The production of moving pictures in the Los Angeles area employed 16,398 wage-earners and attained a value of \$171,943,349. Other manufactures in the same area employed 128,555 wage earners and produced in goods \$1,205,280,842. The area including San Francisco and Oakland employed 88,414 wage-earners and produced goods to the value of \$1,052,353,275.

Mineral Production. The rise in California's production of petroleum, in the face of persistent demand in some quarters for effectual restriction, led to the Legislature's passing in June, 1939, a measure for the compulsory proration of the products of petroleum in the State, efforts to restore the old system of voluntary proration having failed to give satisfaction. For 1938, the fifth full year of rising production, the total yield of petroleum rose to 249,749,000 barrels, from 238,521,000 for 1937. The gain occurred essentially in the Wilmington field of the Los Angeles Basin district, a field that had begun its recorded production in 1937 with 14,186,000 barrels and that jumped to 34,168,000 barrels for 1938, becoming the State's highest producer. The value of the

State's output of 1937 was about \$242,100,000. It furnished more than half of the total value of the State's native mineral production for that year, which attained \$476,974,925.

Natural gas, second in importance among the State's mineral products, was estimated to have attained for 1938 a total output of 365 billion cu. ft., as against 357 billion for 1937. The quantity of the yearly output exceeded by only a moderate proportion the estimated consumption. This consumption, reported as 329,769 million cu. ft. for 1937, was estimated as less by 4 per cent for 1938. The value of the consumed natural gas of 1937 totaled \$21,699,000 at the wells and \$91,089,000 at the end of its journey to the consumer. More natural gas was extracted from the ground than was actually produced; for some was brought up, stripped of its absorbed gasoline, and piped back under ground. Inclusive of the gas thus returned to the earth, about 388 billion cu. ft. of natural gas were treated for the extraction of natural-gas gasoline in 1938. The yearly production of such gasoline increased to 663,992,000 gallons for 1938, from 623,894,000 (value, \$37,719,000) for 1937.

The production of gold, silver, copper, lead, and zinc in California aggregated \$51,904,786, approximately, for 1939; for 1938, \$47,767,894. Within three millions of either total was contributed by gold. The output of gold rose to some 1,406,100 ounces for 1939, from 1,311,129 for 1938; in value, to \$49,213,500, from \$45,889,515. The yield of silver increased to 2,612,000 ounces (1939), from 2,590,804 (1938); by value, to \$1,772,994, from \$1,674,863. Neither copper, lead, nor zinc was produced to the value of a million dollars in either year. The production of gold, on the other hand, exceeded that in any other State of the Union for 1939 and exceeded that of California itself, as to quantity, for any other year after 1862.

Legislation. The regular biennial session of the Legislature convened in January. It quickly passed a deficiency appropriation of \$19,975,000 to cover the cost of the State's share of poor-aid through the rest of the fiscal year ending with June 30. Later in the session a defection from the Democratic majority in the Assembly (lower house) enabled Governor Olson's opponents to cut from his budget an appropriation of \$72,600,000 to carry this service through the next fiscal year; thus the question of the amount of the State's contribution was made a matter for separate appropriation after discussion between the Governor and leading legislators. The parties' slowness in making the necessary compromise helped to produce the most protracted legislative session (175 days) in the State's annals. Finally (June 22) the Legislature granted \$35,000,000 in the guise of a temporary appropriation, to bridge the time until an acceptable scheme for this line of expenditure could be shaped. Adjournment followed, on the night of the 22nd.

Following the example of a number of other States, California enacted statutes terminating the right to recover damages for breach of promise to marry and for alienation of affection. Governor Olson vetoed a bill to exclude aliens from poor-aid.

Following the State's prolonged test of the system of so-called voluntary proration of the output of petroleum, the Legislature enacted a system of State control over the production of petroleum and its marketing.

Political and Other Events. The inaugura-

tion of Governor Culbert L. Olson at the beginning of January gave the State a Democratic administration favorable to the course of President Roosevelt and in some other matters particularly committed to measures favored by liberals. Olson had implied, though he had not promised, while running for Governor in 1938, that if elected he would pardon Thomas L. Mooney, labor leader imprisoned for life in San Quentin prison after having been found guilty of perpetrating the fatal bombing of the Preparedness Parade in San Francisco in 1916. Olson's first important official act as Governor was the pardoning (see also below) of Mooney, January 7; later, after delay in obtaining the required approval of the State Supreme Court, he granted (October 16) a commutation of sentence releasing Warren K. Billings, a second-offender, serving a life sentence on conviction of participation in the same crime. Olson failed to obtain from the Legislature the funds that he sought for the support of the State's indigents (see *Legislation*, above). Early in September Olson put into effect a plan to create co-operative associations, for which the indigents were to work and from which they were to purchase goods that they needed, in the manner that had been proposed in 1934, in Upton Sinclair's scheme of "production for use."

The outgoing Governor, Frank F. Merriam, was subjected in January to examination before the grand jury of Alameda County, to determine whether he had had any connection with or knowledge of alleged activity in procuring clemency for convicts, on the part of his former secretary Mark L. Megladdery, whom Merriam had appointed a Superior Court judge before leaving office. The incoming Attorney-General, Earl Warren, took an active part in the proceedings; much testimony was obtained and made public, in accordance with the Californian practise of open proceedings before grand juries investigating public officials; testimony printed in the press included allegation that money had been paid for Megladdery's efforts on behalf of a convict who had obtained parole.

Federal Activity in the State. Work on the Central Valleys Water Project progressed, the Federal Administration awarding contracts, in particular for material to be used in the construction of the Shasta Dam, notably about \$10,000,000 worth of cement, which the builders were to start using early in 1940; this dam was to provide water for irrigation and for generating electric current for an area of some millions of acres, more northerly than that served by Boulder Dam. Moves on the part of the Federal Government to establish a claim to the coastal submerged deposits of petroleum in the State continued: Acting Secretary of the Navy Edison urged Congress (February 20) to authorize the U.S. Attorney-General to remove from the territorial waters all persons taking petroleum there without the permission of the United States, and asserting that one nation (supposedly Japan) had obtained from this area, in 1937, 30,000,000 barrels of petroleum or its products; about the same time, State Attorney-General Warren filed a brief at Washington, denying the basis for a Federal claim to the petroleum off the Californian coast. As to the influx of indigents into the State, the Federal Administration had a commission make a study of ways in which to deal with it; the resulting report proposed resettling migrants where they could best support themselves, returning some of them to

their former homes, and spreading information that would stop further fruitless immigration into California.

The conflict between the Federal Government and San Francisco over the disposal made of electric current derived from works at the Hetch Hetchy dam was continued. While a Federal District Court's injunction against the city, in the Federal litigation to terminate the sale of such current through the Pacific Gas and Electric Company as "agent," was in course of appeal, the city held (May 19) a special election, at which it voted on a proposal to issue \$55,000,000 of bonds with which to meet the cost of a proposed municipal system for distributing this current. The voters rejected the bond issue, as they had rejected a like proposal earlier in the controversy, in 1937.

The Mooney Pardon. Governor Olson's grant of pardon to Thomas J. Mooney, the convicted bomber, after Mooney's having served 22 years in prison, took place in the State Capital at Sacramento, in the presence of a throng of thousands of Mooney's supporters and admirers, admitted by ticket. The occasion was so arranged as to give it the character of amends made by the State to a martyr of the cause of labor, as great numbers in the ranks of the labor unions held Mooney to be. Olson had made the issuing of the pardon the first piece of major business in his administration. He met Mooney in the crowded chamber of the State Assembly, held a "hearing," at which none came forward to oppose the pardon, expressed his belief that the prisoner was wholly innocent, and then delivered to Mooney, with his own hand, the pardon document; after which Mooney addressed the audience, and the meeting adjourned to the State Fair Grounds, where a greater assemblage had come to attend the Governor's inaugural barbecue. Mooney was paraded on the following day in San Francisco, along Market Street, where the bombing in 1916 had occurred.

The Mooney case, which had been repeatedly carried to the Federal Supreme Court and to that of the State without success, arose from the explosion of a bomb (July 22, 1916) in Market Street, San Francisco, during the march of a parade on Preparedness Day; the bomb took ten lives. Mooney and others were indicted promptly. Tried in January and February, 1917, Mooney was convicted and sentenced to hang. Judge Griffin, who had heard the case, asked the State's Attorney-General to petition the State Supreme Court for a new trial. This was done, but a new trial was denied, nor was it granted after a special commission named by President Wilson had reported (Jan. 16, 1918), in favor of retrial. Governor Stephens commuted the sentence (Nov. 28, 1918) to imprisonment for life. Efforts for a new trial were renewed after the lapse of years had weakened popular sentiment against the prisoner. He was finally reindicted and was put on trial again (May 22, 1933); the court directed the jury (May 24) to return a verdict of guilty. Prior to the bombing, Mooney had been thrice tried and at last acquitted of complicity in a plot to dynamite property of the Pacific Gas and Electric Company at Contra Costa in 1913, and in 1915 he had become an associate editor of a periodical, *The Blast*, run by Emma Goldman and Alexander Berkman. The original case against Mooney depended in great part on his identification by a waiter, John MacDonald, as one of two

men seen taking a suit case to the place of the explosion just before it occurred.

Old-Age-Pension Campaign. Defeated at the polls in November, 1938, the campaign for substantial pensions to be paid by the State to all of its citizens who were ripe for retirement from working for their own support revived early in 1939 under a somewhat altered form. The age of qualification for the receipt of the proposed pension was kept at 50 years; the rate of the payments to each recipient, at \$30 a week; and the medium of the payment was still to be the circutable State warrant extinguishable within a year by the required affixing, weekly, of a stamp costing 2 per cent of the warrant's face value. But in order to improve the plan of 1938 the sponsors now proposed the creation of a special system of credit-clearing banks to take the place of the unwilling commercial banks, in handling the warrants; the issue of \$20,000,000 of the State's bonds for the means to give the plan a start; and the removal of a requirement that public employees accept warrants for half their pay. The name California Retirement Life Payment Plan was adopted. As in the pension movements of 1938 and earlier, signatures to a petition for a referendum election were solicited and readily obtained. A petition carrying over 700,000 names was presented. Governor Olson issued (July 1) a proclamation requiring that a special election, as sought, be held on November 7. In an accompanying statement Olson declared himself personally opposed to the plan, thus making an end of reticence maintained on the subject up to that time. The plan was defeated on November 7 by about 2,000,000 adverse votes to 1,000,000 in favor. Governor Olson came out on the 12th with a propitiatory proposal that the State amplify its aid to the elderly by giving \$60 a month, to start at the individual's reaching 60 years.

Relations with Labor Unions. The question of the validity of the "closed shop" (exclusion of non-union labor by agreement between union and employer) was in course of litigation during the year. A decision of the State Appellate Court (April 7) held, in cases dealing with picketing to enforce a closed shop, that a law of 1933, forbidding contracts requiring employees to join some specific labor organization, was applicable and constitutionally sound; counsel for the A.F.L. unions involved in the case announced the intention to appeal.

The NLRB ordered the Bank of America National Trust and Savings Association to reinstate certain employees and to cease to discourage employees' membership in a C.I.O. union, and held this and similar banks amenable to the NLRB's rulings under the terms of the Labor Relations Act. In Los Angeles eleven men connected with the C.I.O. were indicted (February 16) for prosecution as having extorted union dues from employees in the local Chrysler works. In the maritime trades employers' contracts with longshoremen, masters, engineers, and some other groups were extended from their date of termination, October 1. Earlier in the year disagreements between employers and some of the C.I.O. maritime unions occasioned strikes on the San Francisco waterfront. The Associated Farmers of America, a body that had taken a course objectionable to unions in California, was slated for investigation by the U.S. Senate's Civil-Liberties Committee, which received an appropriation of \$50,000 chiefly for this task.

Collective Medical Service Started. The California Physicians' Service, a profit-renouncing corporation, was established. It had the sponsorship of the State Medical Association and was designed to provide medical care, at need, to poor people in return for flat monthly payments at the usual rate of \$2.50 a month. The care of the organization was extended in August to cover members of the California State Employees' Association, and agreements were sought with other great bodies of employees.

San Francisco's Affairs. The opening of San Francisco's World's Fair, the GOLDEN GATE INTERNATIONAL EXPOSITION (q.v.), on February 18 started a season of more than nine months of incoming tourists and visitors. An account written in August indicated that figures for travel into the city, for issues of permits to construct residential buildings, and for sales in a variety of lines were all favorably affected. The long-discussed plan to standardize the salaries of municipal employees was embodied in an ordinance, adopted by the Board of Supervisors and signed by Mayor Rossi (March 1); the process of standardization therein provided called for increasing the pay of about 4000 persons. A committee acting for taxpayers undertook to oppose the ordinance and there followed a submission of the issue to popular vote, by the route of a referendum; a special election (May 19), by an adverse vote of three to one, rejected the ordinance for standardizing pay. The city's vote against bonds for a proposed plan of municipal electrical distribution is discussed in a paragraph above, on *Federal Activity*.

Events in Los Angeles. Mayor Bowron, a former judge of the Superior Court, made Mayor by the pro-reform vote in an election in 1938 for the recall of the previous Mayor, Frank L. Shaw, was active in the course expected of him. A trial brought the conviction of Joseph E. Shaw and William Cormack, two officials of the previous administration, on charges of altering civil service records, to the advantage of certain candidates for positions. Changes were made in personnel and assignments in the police. Bowron thereafter asked the voters to defeat for re-election four members of the City Council, whom he regarded as unacceptable; two or more were reported to have lost their seats in the municipal election of May 2. Proceedings in the Superior Court were carried on in July for the purpose of ending the trade of four vessels habitually anchored at sea off Los Angeles harbor, beyond the State's jurisdiction, and reputed to be gambling establishments. The main line of the Metropolitan Water District's aqueduct from the Colorado River began operation November 19, sending 270,000 gallons a minute to the Cajalco reservoir for the use of Los Angeles and twelve other cities.

Officers. California's chief officers, serving in 1939, were: Governor, Culbert L. Olson (Dem.); Lieutenant-Governor, Ellis E. Patterson; Secretary of State, Frank C. Jordan; Treasurer, Charles G. Johnson; Comptroller, Harry B. Riley; Attorney-General, Earl Warren; Superintendent of Public Instruction, Walter F. Dexter.

CALIFORNIA, UNIVERSITY OF. A coeducational institution of higher learning with headquarters at Berkeley, Calif., founded in 1868. Campuses are found in various parts of the State. At Los Angeles, the University of California at Los Angeles, the Los Angeles Medical Depart-

ment; at Mt. Hamilton is the Lick Observatory; at San Francisco, the California School of Fine Arts, Hastings College of the Law, Medical School, the George Williams Hooper Foundation for Medical Research, College of Dentistry, College of Pharmacy; at Davis, a campus devoted chiefly to instruction and research by the College of Agriculture; at Riverside, the College of Agriculture, including the Citrus Experiment Station and Graduate School of Tropical Agriculture; at La Jolla, the Scripps Institution of Oceanography.

The total number of resident students in the academic and professional departments, fall session, 1939, was 26,004, of whom 15,655 were men and 10,349 were women. At Berkeley 16,199 were enrolled; at Los Angeles 8522. The enrollment in the University extension division, fall of 1939, was 14,577 in classes and correspondence courses. The 1939 summer session enrollment (Berkeley and Los Angeles) totaled 8153. During 1938-39 there were approximately 2067 members on the regular teaching staff and 717 on the extension staffs. The total income for 1938-39 was \$13,394,850, including gifts totaling \$648,654 for current use. In addition, gifts were received totaling \$219,938 for plant, \$851,237 for endowment, and \$29,315 for loan funds. Total assets were listed at \$87,785,742 including \$53,812,732 in real estate, improvements, and equipment, and \$24,201,748 in endowment and trust funds. The libraries contained approximately 1,597,304 volumes. President, Robert Gordon Sproul, LL.D.

CALIFORNIA INSTITUTE OF TECHNOLOGY. An institution for collegiate and graduate instruction and research in the pure and applied sciences in Pasadena, Calif., founded as Throop University in 1891. The enrollment for 1939-40 was 886, of whom 615 were in the undergraduate and 271 in the graduate school. The faculty numbered about 200. The endowment was approximately \$12,000,000 and the annual income approximately \$1,000,000. There were 48,675 volumes in the library. Construction was completed on four new buildings. The institute has no president, the administration centering in an executive council of nine, of which Robert A. Millikan, Ph.D., LL.D., Sc.D., is chairman.

CALINESCU, ARMAND. Rumanian Prime Minister, assassinated in Bucharest, Sept. 21, 1939 by members of the pro-Nazi Iron Guards. He was born in Pitesti, Rumania, May 22, 1893 and was educated at Bucharest University and in Paris. A lawyer by profession, he became a leader of the National Peasant Party in his native county of Arges, and his first public office was as secretary general of the Ministry of Agriculture and Domains. Subsequently he became under-secretary of the Interior. In December, 1937, at the request of King Carol, he accepted the post of Minister of the Interior in the cabinet of Octavian Goga, although he did not subscribe to his policies. In the cabinet of Miron Cristea (q.v.) he retained this post and was directed by the King to suppress the Iron Guards who, during the Goga regime, had flourished unmolested. He arrested many of the leaders and made public a series of crimes committed by the organization, included in which was a plan to kill King Carol. Upon the death of Cristea he was appointed Premier (Mar. 7, 1939), having served as Vice Premier. He retained the posts of National Defense and Interior.

Because of his opposition to the Iron Guards he had exercised great care. But on September 21,

on his way to a conference with the King, his car was intercepted and he was shot through the head and killed instantly. His executors were captured and shot in the public square. A firm champion of Rumanian independence, Calinescu was a known foe of Fascism. For a history of his brief premiership, see *RUMANIA under History*.

CAMBODIA. See *FRENCH INDO-CHINA*.

CAMERAS. See *PHOTOGRAPHY*.

CAMEROON, kām'ēr-ōon', FRENCH. A West African territory, part of the former German protectorate of Kamerun, confirmed as a mandate of France by the League of Nations in 1922. Area, 162,934 square miles; population (Jan. 1, 1938 estimate), 2,516,623, compared with (1936 census) 2,389,000. Yaoundé (capital), 20,000 inhabitants in 1936.

Production and Trade. The main products (1937-38 production, in metric tons) consist of groundnuts, 40,000; maize, 36,000; palm oil (1938 export), 8900; palm-kernel oil (1938 export), 14,900; cacao (1938 export), 31,000. Gold (440 kilograms estimated production for 1938), almonds, hides, timber, and ivory were other products. Livestock in 1938 included 900,000 oxen and 25,000 asses. Communications (1938): 3105 miles of roads suitable for motor-vehicle traffic, and 314 route miles of railway. In 1938 (values in old U.S.A. gold dollars), imports were valued at \$5,300,000 and exports at \$5,400,000. During 1937, 721 vessels aggregating 1,604,803 tons entered and cleared the ports.

Government. Budget (1938): revenue, 107,762,000 francs; ordinary expenditure, 98,392,000 francs; extraordinary expenditure, 9,370,000 francs (franc averaged \$0.0288 for 1938). French Cameroon was constituted an autonomous territory, both administratively and financially, by decrees of Mar. 23, 1921 and Feb. 21, 1925. Commissioner, M. Boisson.

CAMEROONS, kām'ēr-ōonz', BRITISH. That part of the former German protectorate of Kamerun which was confirmed as a mandate of Great Britain by the League of Nations in 1922. Area, 34,081 square miles; population (1938 estimate), 831,103, compared with (1931 census) 770,000. Palm oil, palm kernels, cacao, bananas, and rubber are the main products. In 1937, imports were valued at £337,694 and exports at £526,984. Vessels aggregating 537,452 tons entered and cleared the ports of Victoria and Tiko. For 1936-37, revenue was £125,075 and expenditure was £173,092. Administration is under the control of the governor of Nigeria. The northern part of the territory is attached to the Nigerian provinces of Adamawa, Benue, and Bornu; the southern part, known as Cameroons province, it attached to the Southern Provinces of Nigeria.

CAMP FIRE GIRLS, Inc. An organization providing constructive leisure-time activities for 250,000 girls between the ages of 10 and 20, and through the Blue Birds, the junior organization, for girls 8 to 10.

In 1939, the Camp Fire Girls' interest in Americana led them to an exploration of their heritage of art, music, literature, scientific achievements, and folklore. Americana exhibits and costume parties were held throughout the country in which whole families, and often whole communities took part. Older Camp Fire Girls made valuable contributions to the World Center for Women's Archives by gathering information and important documents on "Women of Achievement" in their towns. Every group of Camp Fire Girls has some

camping experience each year, and last year the attendance at the 128 organized Camp Fire Camps was greater than ever before. National Headquarters are at 88 Lexington Avenue, New York City.

CANADA. A Dominion of the British Commonwealth of Nations, comprising nine provinces and two territories. (See separate articles on the provinces and territories.) Capital, Ottawa.

Area and Population. The land area, the census population of June 1, 1931, and the estimated population on June 1, 1939, are shown by provinces and territories in the accompanying table.

AREA AND POPULATION OF CANADA

Provinces and Territories	Land area, sq. miles	Population 1931	1939
Prince Edward Island . . .	2,184	88,038	95,000
Nova Scotia	20,743	512,846	554,000
New Brunswick	27,473	408,219	451,000
Quebec	523,534	2,874,255	3,210,000
Ontario	363,282	3,431,683	3,752,000
Manitoba	219,723	700,139	727,000
Saskatchewan	237,975	921,785	949,000
Alberta	248,800	731,605	789,000
British Columbia	359,279	694,263	774,000
Yukon Territory	205,346	4,230	4,000
Northwest Territories	1,258,217	9,723	10,000
Total	3,466,556	10,376,786	11,315,000

The Indian population in 1931 was 122,920. Of the white population in 1931, 5,381,071 were of British origin (English, 2,741,419; Scottish, 1,346,350; Irish, 1,230,808; other, 62,494) and 2,927,990 of French origin. There were 5,374,541 males and 5,002,245 females.

In 1931, 4,804,728 inhabitants resided in rural districts and 5,572,058 in urban communities. Populations of the chief cities in 1931 were: Montreal, 818,577 (1,263,298, with suburbs, in 1938); Toronto, 631,207 (648,309 in 1938); Vancouver, 246,593; Winnipeg, 218,785 (215,814 in 1936); Hamilton, 155,547; Quebec, 130,594; Ottawa, 126,872; Calgary, 83,761 (83,407 in 1936); Edmonton, 79,197 (85,774 in 1936); London, 71,148; Windsor, 63,108; Verdun, 60,745 (64,144 in 1939); Halifax, 59,275; Regina, 53,209 (53,354 in 1936); Saint John, 47,514; Saskatoon, 43,291 (41,734 in 1936). Including suburbs, Montreal had 1,000,157 inhabitants in 1931 (1,443,588 in 1938); Toronto, 808,864 (855,235 in 1938); Vancouver, 308,340; Winnipeg, 280,202.

The total number of immigrants entering Canada in 1938 was 17,244, of whom 4659 were Canadians returning from the United States; 3389 were from the United Kingdom. Living births in 1937 numbered 220,235 (19.8 per 1000); deaths, 113,824 (10.2 per 1000); marriages, 87,800 (7.9 per 1000). The 1937 birth rate by provinces ranged from a high of 24.1 for Quebec to a low of 15.0 for British Columbia. The average birth rate of all Canada for the period 1926-30 was 24.1 per 1000.

Education and Religion. Illiteracy rate, 1931 census, 7.2 per cent of all over five years. Out of a total estimated population of 11,120,000 in 1937, there were 2,460,074 enrolled in educational institutions (2,222,565 in provincially-controlled schools, 110,946 in privately-controlled schools, 18,297 in Dominion Indian schools, and 98,366 in universities and colleges).

The principal religious groups in Canada at the 1931 census were: Roman Catholics, including 186,654 Greek Catholics, 4,285,388; United Church (Methodists, Congregationalists, and Presbyterians), 2,017,375; Anglicans, 1,635,615; Presbyterians (not included in United Church), 870,728; Baptists, 443,341; Lutherans, 394,194; Jewish,

155,614. Of the 2,927,990 Canadians of French origin at the 1931 census, 2,849,096 were Roman Catholics.

Production. An unofficial estimate published in the *Financial Post Business Yearbook and Market Survey* placed Canada's national income in 1938 at \$4,401,500,000, or 8.1 per cent less than in 1937. According to estimates of the Dominion Bureau of Statistics, the gross value of production in 1937 was \$5,658,877,000 (\$4,862,126,000 in 1936); and the net value, \$2,970,617,000 (\$2,628,419,000). Of the 1937 net production, manufactures accounted for \$1,193,399,000; agriculture, \$678,953,000; mining, \$372,796,000; forestry, \$284,504,000. Ontario led the provinces, with 44.44 per cent of the net production. Quebec ranked second with 25.56 per cent.

Agriculture. The estimated gross value of agricultural production in 1938 was \$1,020,217,000. The value of the gross output in 1938 by chief items was (in provisional figures): Field crops, \$528,860,000; livestock and poultry, \$585,213,000; dairying, \$220,163,000; fruits and vegetables, \$42,952,000. Yields of the principal field crops in 1936, 1937, and 1938, with preliminary returns for 1939, are shown in the accompanying table.

CANADIAN CROP YIELDS, 1936-39

(Units in thousands of bushels, except as indicated)

	1936	1937	1938*	1939*
Wheat	219,218	182,410	350,010	449,058
Oats	271,778	268,442	371,382	373,132
Barley	71,922	83,124	102,242	99,209
Rye	4,281	5,771	10,988	16,549
Buckwheat	8,596	7,745	7,079	.. .
Mixed grains	33,639	36,129	39,161	.. .
Potatoes	39,034*	42,547*	35,938*	.. .
Hay and clover	13,803*	13,030*	13,798*	13,078*

* Subject to revision. * Estimates * 1,000 cwt. * 1,000 tons

The gross value of the principal field crops produced in 1939 was estimated at \$635,764,000, divided in part as follows: Wheat, \$251,371,000; hay and clover, \$111,697,000; oats, \$105,764,000; potatoes, \$38,059,000; barley, \$33,266,000; mixed grains, \$18,976,000; alfalfa, \$17,720,000; fodder corn, \$13,577,000. Livestock on Canadian farms in June, 1939, included 8,474,000 cattle, 4,294,000 swine, 3,365,800 sheep, and 2,824,390 horses. The 1939 wool clip was estimated at 13,615,000 lb.

Manufacturing. Statistics for 1937 were: Number of employees, 660,451; capital, \$3,465,227,831; salaries and wages, \$721,727,037; values of materials used, \$2,006,926,787; gross value of production, \$3,623,159,500; net value of production, \$1,506,624,867. In 1932 the gross value of production was \$1,980,472,000. The following figures for gross value of production for 1937, with 1932 figures in parentheses, show the industrial groups recording the most striking gains: Iron and its products, \$622,520,000 (\$232,697,000); non-ferrous metals, \$482,441,000 (\$152,111,000); wood and paper, \$597,062,000 (\$368,789,000); vegetable products, \$672,540,000 (\$447,804,000); chemicals, \$148,973,000 (\$95,279,000); non-metallic minerals, \$208,205,000 (\$136,698,000); textiles, \$400,384,000 (\$257,109,000); animal products, \$449,784,000 (\$262,794,000).

Output of central electric stations in 1938 was 26,012,000,000 kilowatt hours (preliminary) while the total capacity of these stations was 7,486,900 h.p. (4,925,500 in 1929). Production of wood pulp for the same year was 3,667,800 tons; paper and paper products, 3,249,300 tons (newsprint, 2,668,900 tons). Canada in 1938 produced 70.7 per cent

of all North American newsprint and 34.9 per cent of the world output.

Mineral Production. Minerals accounted for 30.7 per cent of all Canada's exports in 1938. In that year the value of all mineral production was \$444,824,222 (provisional), as against \$457,359,092 in 1937 and \$230,434,726 in 1931. The Dominion holds first rank in world production of platinum metals, asbestos, and nickel, second in radium, third in gold, copper, and zinc, and fourth in lead. The quantity and value of the leading mineral products in 1938 were: Gold, 4,715,480 fine oz., \$165,867,009; copper, 586,020,402 lb., \$58,026,972; nickel, 210,673,270 lb., \$53,949,311; coal, 14,247,783 short tons, \$43,912,204; lead, 418,913,257 lb., \$14,008,459; asbestos, 289,877 short tons, \$12,893,806; zinc, 381,506,588 lb., \$11,723,697; natural gas, 33,441,139 M. cu. ft., \$11,847,803; petroleum, crude, 6,956,229 bbl., \$11,826,594; silver, 22,157,154 fine oz., \$9,633,265; cement, 5,519,102 bbl., \$8,241,350.

The value of mineral production in 1939 reached an all-time high of \$470,179,000, according to preliminary returns. Gold accounted for \$104,305,000 (about \$182,000,000 including the premium); silver, \$76,969,000; copper, \$60,721,000; nickel, \$51,099,000; coal, \$48,098,000; asbestos, \$15,454,000; natural gas, \$12,250,000; lead, \$12,375,000; zinc, \$12,066,000; crude petroleum, \$10,409,000; platinum, \$9,368,000.

Forest Products. Forestry statistics for 1937 were: Primary production, \$163,249,887; lumber production, 4,005,601 M. ft. b.m., \$82,776,822; sawmill products, \$104,849,785; pulp and paper products, \$226,255,915; exports of wood, wood products and paper, \$223,918,476 (\$253,434,860 in 1938). Sawmill statistics for 1937 were: Number of mills, 3836; capital, \$90,405,000; employees, 33,917; payroll, \$27,173,000.

Fisheries. The value of production of sea and inland fisheries in 1938 was \$40,552,000, the highest since 1930. Sea fisheries accounted for \$33,827,000 or 83 per cent; inland fisheries, \$6,725,000, or 17 per cent. Fish exports in 1938 were valued at \$25,590,000. The principal kinds of fish caught, and the value as marketed, were: Salmon, \$15,045,000; lobster, \$3,335,000; herring, \$2,487,000; halibut, \$1,789,000; whitefish, \$1,655,000; sardines, \$1,393,000; haddock, \$1,362,000; trout, \$1,038,000; pickerel, \$1,032,000. Capital employed in the industry in 1938 was \$48,561,000; number of employees, 85,871.

Fur Production. Fur farms in 1937 accounted for 40 per cent of all pelts produced in Canada. Pelts of all kinds taken in 1937 numbered 6,237,640, valued at \$17,526,365. There were 9179 fur farms, with a capital of \$17,363,000, of which \$9,676,000 was invested in fur-bearing animals. The total number of animals on farms was 241,359; the number of live animals sold, 25,202; pelts sold, 259,870; total fur farm revenue, \$6,810,000. Out of total pelt sales of \$5,779,400 from fur farms in 1937, silver fox pelts provided \$5,019,400.

Tourist Trade. Total expenditures of foreign travelers in Canada during 1938 were officially estimated at \$273,431,000 (\$290,581,000 in 1937). Of the 1938 total, overseas travelers accounted for \$14,683,000 and the remainder was spent by travelers from the United States. Canadian travelers in foreign countries spent \$123,913,000 in 1938 (\$124,422,000 in 1937), of which \$103,956,000 (\$102,087,000) was spent in the United States.

Foreign Trade. Canadian foreign trade in recent fiscal years is shown in the accompanying table.

CANADIAN IMPORTS AND EXPORTS

(In thousands of Canadian dollars)

Years ended March 31	Total exports	Total imports	Excess: Imports (-) Exports (+)
1929-30.....	1,144,938	1,248,274	-103,336
1932-33.....	534,978	406,384	+128,594
1936-37.....	1,074,244	671,876	+402,369
1937-38.....	1,084,821	799,070	+285,751
1938-39*.....	969,770	658,228	+311,542

* Preliminary figures.

Of the 1938-39 imports, the United States supplied \$412,477,000; United Kingdom, \$115,636,000; Straits Settlements, \$10,564,000; Germany, \$10,117,000; Australia, \$8,807,000; British India, \$8,356,000. Of the exports, the United States took \$375,939,000; United Kingdom, \$325,465,000; Australia, \$33,254,000; Japan, \$21,045,000; Germany, \$17,796,000; New Zealand, \$17,028,000; Union of South Africa, \$15,913,000. Values of leading imports were: Crude petroleum, \$41,483,348; coal, \$35,937,195; machinery, except farm, \$35,286,756; automobile parts, \$23,455,938; farm implements and machinery, \$18,079,948. The chief exports were: Newsprint, \$107,360,211; gold bullion (non-monetary), \$87,590,120; wheat, \$84,494,433; nickel, \$49,565,526; copper bars, \$42,190,363; planks and boards, \$37,100,824; meats, \$35,375,618.

Finance. The accompanying table shows the total Dominion budget receipts, ordinary expenditures, and total expenditures for the period 1936-37 to 1939-40.

DOMINION FINANCES
(Thousands of Canadian dollars)

Years ended March 31	Total revenues	Ordinary expendi- tures	Total expendi- tures	Surplus (+) or deficit (-)
1916-37.....	\$454,154	\$387,112	\$532,005	-\$ 77,851
1937-38.....	516,693	414,891	534,408	- 17,715
1938-39.....	502,171	413,032	553,063	- 50,892
1939-40*.....	490,000	.....	550,000	- 60,000

* Estimates, excluding about \$30,000,000 for defense, to be handled on amortization basis, and losses on 1938 wheat crop in excess of \$25,000,000.

The funded debt of the Federal Government and Treasury Bills outstanding on Mar. 31, 1939, aggregated \$3,385,697,034 (\$3,314,532,604 on Mar. 31, 1938); total liabilities, \$3,710,610,593 (\$3,608,191,471).

Shipping. During the fiscal year ended Mar. 31, 1938, a total of 26,407 sea-going vessels of 31,421,775 register tons entered Canadian ports with 12,698,849 tons of cargo. Vessels cleared, 27,359 of 31,402,043 register tons, with 13,882,060 tons of cargo. Tonnage arriving at the leading ports in 1938-39 was: Vancouver, 10,979,372; Montreal, 8,796,218; Victoria, 7,120,232; Quebec, 4,118,635; Halifax, 3,889,933; Toronto, 3,259,243. Canadian canals in 1938 carried approximately 24,640,501 tons of freight and 50,140 passengers. Traffic through the combined American and Canadian locks of Sault Ste. Marie was 68,900,000 tons in 1939 (39,700,000 in 1938).

Railways, etc. On Jan. 1, 1938, the mileage of steam railways in Canada was 42,727. The two main systems were the privately-owned Canadian Pacific Railway, with 17,186 miles of single track, and the government-owned Canadian National Railways, with 21,974 miles. In the calendar year 1937 all steam railways carried 22,038,709 passengers and 82,220,374 tons of freight, with total earnings of \$42,991,444 and total expenditures of \$29,545,641. Gross revenues of the two main systems in 1938 were \$299,800,000 against \$310,300,-

000 in 1937; carloadings, 2,428,500 (2,635,382). Carloadings in 1939 numbered 2,548,944.

The total highway mileage in 1937 was 559,040 (see **ROADS AND STREETS**). Motor vehicles registered as of Jan. 1, 1939, numbered 1,375,133. In August, 1939, scheduled air services were maintained by 11 operating air lines over 16,112 miles of route (eliminating duplications). Statistics of commercial air lines operating entirely within Canada for 1938 were: Miles flown, 8,350,463; paying passengers carried, 87,482; freight carried, 19,368,865 lb.; mail carried, 1,305,174 lb. Regular air-mail service on the new trans-Canada route between Montreal and Vancouver was started Mar. 1, 1939, and passenger service on April 1.

Government. Governor-General in 1939, Baron Tweedsmuir of Elsfield (John Buchan), who assumed office Nov. 2, 1935. Prime Minister, President of the Privy Council, and Secretary of State for External Affairs, William Lyon Mackenzie King (Liberal), appointed Oct. 23, 1935. For the members of the cabinet at the beginning of 1939 and the Constitution, see 1938 **YEAR BOOK**, p. 124. For changes in the cabinet and other governmental developments in 1939, see *History*.

HISTORY

Canada Enters War. The historic controversy over Canada's course in the event of Britain's involvement in a European war was resolved as a result of the British declaration of war upon Germany on Sept. 3, 1939. Before the European crisis reached its climax, the Cabinet on August 24 unanimously agreed that if Britain went to war Canada would join her. During the ensuing week, the government took precautionary military and economic measures while Prime Minister Mackenzie King, alone among the chief executives of the British Dominions, followed President Roosevelt's example and addressed peace appeals to Hitler, Mussolini and President Moscicki of Poland.

With the German invasion of Poland on September 1, Canada was placed on a war footing and Parliament was called in special session. In accordance with the Cabinet's previous decision, Canada automatically entered the conflict at the same moment as Great Britain on September 3. On September 9 Parliament sustained the Cabinet's policy by an almost unanimous vote. The next day the government issued a formal declaration of war. As evidence that this represented an independent act of the Canadian nation, the proclamation was issued in the name of Minister of Justice Ernest Lapointe over the printed signature of Prime Minister Mackenzie King and under the seal of the Governor-General, who acted in the name of the King. In 1914 the Canadian Government entered the World War merely by publishing the British war declaration in the official *Canada Gazette*.

Neutrality Debate. The government's policy in case Britain went to war had been debated at length in the parliamentary session that opened Jan. 12, 1939. Isolationist and nationalist spokesmen demanded that the rapidly mounting defense expenditures be spent exclusively on preparations to resist attacks upon Canada. The issue was raised in another form by an isolationist motion providing that Canada should not become a belligerent in a British war unless the Canadian Government directly advised the Crown to that effect. A French-Canadian member proposed that Canada be declared an independent kingdom to safeguard its neutrality. Another demanded that Parliament

should not commit the country to another war without a General Election on the issue.

The debate continued intermittently from January to April, with numerous participants. It was climaxed by the statements of Dr. Robert Manion, Roman Catholic leader of the Conservative Opposition; Prime Minister Mackenzie King; and Minister of Justice Lapointe, spokesman of French-Canadian Liberal opinion. All three opposed neutrality legislation on the ground that it was impossible for Canada to remain neutral in a British war and stay in the British Commonwealth. They expressed equal opposition to conscription for any overseas war. The Prime Minister further asserted that his government's policy was the same as that set forth in 1910 by Sir Wilfred Laurier, the French-Canadian Liberal leader, as follows:

If England is at war, we are at war, and liable to attack. I do not say we will always be attacked, neither do I say we should take part in all the wars of England. That is a matter that must be guided by circumstances, upon which the Canadian Parliament will have to pronounce and have to decide in its own best judgment.

The Royal Visit. Isolationists' sentiment in Canada derived much of its strength from general disillusionment with British foreign policy toward the League of Nations and in Ethiopia, Spain, and Czecho-Slovakia. But there was a strong revival of opinion favorable to co-operation with London as a result of various developments in 1939. In the first place the Chamberlain Government beginning in March abandoned its policy of appeasement in favor of firm resistance to aggression. Even more influential was the visit of King George VI and Queen Elizabeth to Canada and the United States. They landed at Quebec on May 17, journeyed by rail to the Pacific Coast, stopping at Ottawa and most of the larger cities en route, entered the United States at Niagara Falls for a four-day visit on June 7, and then returned to Canada for a trip through the Maritime Provinces before sailing for England from Halifax on June 15. In both French- and English-speaking provinces the people displayed unqualified enthusiasm for the royal couple and firm allegiance to the British connection.

Other Anglo-Canadian Ties. Canada's political ties with Great Britain were reinforced by the development of mutual economic interests. The British Government in June gave a substantial stimulus to Canadian industry by placing an additional order for \$13,000,000 worth of machine guns and other armaments. This was stated to be the first installment of a long-time program costing \$250,000,000 by which London sought to develop Canada as a secondary source of supply for the British defense forces. The growing Canadian wheat surplus was another effective argument in favor of loyalty to Britain; without Empire markets wheat growers of the Prairie Provinces faced almost certain ruin.

Moreover there was growing anxiety over the success achieved by Nazi emissaries in organizing Canadians of German origin as adjuncts of the National Socialist Reich and its aggressive policies. Of some 140,000 persons of German stock resident in Saskatchewan in 1939, it was estimated that 30,000 were avowed Nazis and it was charged that many of them had signed formal pledges of allegiance to the German *Fuehrer*. The German-born population of Canada exceeded 50,000. On May 14 the anti-Hitlerite German-Canadian League voted to ask the government to investigate Nazi activities in the Dominion and to enlist Canada in

the "stop Hitler" bloc being organized in Europe by Great Britain and France. On May 30 the House of Commons passed a Secrets Act curbing espionage and foreign propaganda in Canada. The Nazi-Soviet rapprochement of August and September strengthened Canadian support of the Anglo-French coalition, particularly in Catholic Quebec.

The Quebec Election. It was among the French-speaking population that the supreme test of loyalty to the British connection occurred. The English-speaking provinces accepted willingly the emergency war powers assumed by the Federal Government, including control of foreign exchange, trade and provincial borrowing. However Premier Maurice Duplessis of Quebec denounced these measures as an infringement on provincial autonomy. On September 25 he dissolved the Quebec Legislature and called for a popular vote of confidence in his stand "for the survival of the French-Canadian race. . . ." He declared that a vote for his party was "a vote for autonomy . . . against conscription . . . participation and assimilation."

Duplessis had been swept into power in 1936 on a strong wave of French-Canadian nationalism which overwhelmed the long-dominant Liberal party (see 1938 YEAR BOOK, p. 634). His challenge was accepted by French-Canadian Liberals as well as by the Dominion Government and English-speaking Canadians generally as a threat to the war unity of the Dominion. Gilbert Layton, Minister without Portfolio in the Duplessis Cabinet, resigned in protest at his chief's policy. The Liberal party organization in Quebec headed by Adélard Godbout denounced the election call as a move to cover up the Premier's three-year "maladministration." The three French-Canadian members of the Federal Cabinet, led by Ernest Lapointe, announced that they would resign if Duplessis won. A third party, Paul Gouin's National Action movement, also attacked the Duplessis Government, but on the ground that it was not sufficiently nationalist.

French-Canadian opposition to conscription for overseas military service was the crux of the ensuing election battle. The three French-Canadian parties, like the Federal Government under Mackenzie King, all pledged themselves to oppose conscription. But Quebec voters apparently feared that a Duplessis victory would not only estrange their province from English-speaking Canada but lead to a Federal election and the formation of a National Government at Ottawa that would not be bound by Prime Minister Mackenzie King's anti-conscription promise.

The result was an overwhelming defeat for Premier Duplessis in the voting on October 25. The Liberals won 68 of the 86 seats in the Quebec Legislative Assembly, in which Duplessis had previously controlled 71 seats. Gouin's National Action candidates garnered very few votes. Godbout formed a new provincial government which thereafter worked in close co-operation with the Ottawa Government.

Canada's War Contribution. Even before war began in Europe, Canada's role had been largely determined in conferences between British and Canadian officials. In the World War Canada mobilized nearly 600,000 men and sent 400,000 across the Atlantic. In 1939 preparations were made for the creation of only two overseas divisions of about 20,000 men each. The first of these, under the command of Major Gen. A. G. L.

McNaughton, was landed in Great Britain on December 17.

Canada made its major contribution as a source of economic and military supply for Britain and its armies, and as a training ground for a huge Empire air force in process of creation as the year ended. The machinery for protecting Canadian economic resources and making them available to the British cause was set in motion even before the war broke out. On August 25 the militia was called out to man coastal defenses, guard canals and other communications lines, maintain an anti-submarine air and naval patrol, etc. On August 28 the Defense Department assumed control of all merchant ships of Canadian registry. When war came, this control was extended to virtually all forms of transportation and industry needed for the mobilization of economic resources. An Order-in-Council of September 3 set up the War Time Prices and Trade Board to control domestic prices in the necessities of life. The police began a round-up of known Nazis and an Air-Raid Precautions Committee was established. The War Measures Act giving the government wide emergency powers was proclaimed September 4. Government censorship of the press and radio broadcasting was put into effect.

The extraordinary session of Parliament on September 8-13 increased the government's war powers. A wartime budget boosting taxes so as to conduct the war on a pay-as-you-go basis was adopted. Corporate and individual income taxes were increased. An excess-profits tax was levied on earnings of all business enterprises. On September 15 the government assumed control over imports, exports and all foreign exchange transactions. Wheat and other grain supplies were reserved for the use of Britain and her allies. The first war loan, a short-term issue of \$200,000,000 two-year notes bearing interest at 2 per cent, was sold at par to the chartered banks on October 12. The properties of enemy aliens were liquidated. All of these efforts were reflected in the steady flow of grain, munitions and other supplies from Canada to Britain that continued under convoy during the remainder of the year. Canadian naval forces co-operated increasingly with those of Britain in the convoy work.

Air Training Scheme. In 1938 the Canadian and British Governments reached an agreement for the training of Royal Air Force recruits in Canada (see 1938 YEAR BOOK, p. 126). The estimated cost of this programme was about \$6,000,000. With the outbreak of war, this scheme was scrapped in favor of a much more ambitious plan. The British Air Minister announced on October 10 that an agreement had been reached with Canada, Australia, and New Zealand for the creation of a great Empire air force, with Canada serving as the advanced training ground for pilots from the three Dominions.

The accord putting this agreement into effect was signed in Ottawa, December 17 by representatives of the four participating countries. The scheme called for the establishment of a large number of aviation training schools, expected to turn out about 5000 pilots and technicians the first year, 10,000 the second, and 20,000 the third. A total personnel of 39,000, entirely Canadian, was to maintain the schools. Britain was to supply most of the aircraft, but other planes and equipment were to be made in Canada and included in the general cost of the program, which was to be divided between Canada, Australia, and New Zea-

land in proportion to the number of pupils trained. Total cost of the program to its expiration on Mar. 31, 1943, was estimated at \$600,000,000 and Canada's share was estimated at \$350,000,000.

Canada thus prepared to make its major contribution to the prosecution of the war through reinforcing British air power. It was announced on December 1 that the Royal Canadian Air Force would maintain its separate identity in the European fighting, instead of being incorporated in the Royal Air Force as during the World War. Many Canadian airmen had previously enlisted in the Royal Air Force. In December, 1939, the first Royal Canadian Air Force squadron was ready to be sent overseas. At the beginning of December the Canadian air strength consisted of 1500 officers and 15,000 men.

There was also some slight expansion of the Canadian Navy. The fleet of 6 destroyers and 4 mine-sweepers was increased in October by addition of the flotilla leader *Assiniboine* and the requisitioning of 40 commercial vessels for naval service. The government also ordered 38 new anti-submarine and aircraft salvage vessels. See MILITARY PROGRESS.

Dominion Politics. Canada's entrance into war changed the political situation in the Dominion as well as in the Province of Quebec. In anticipation of an early General Election, the political parties were maneuvering for position when the year opened (see 1938 YEAR BOOK, p. 125). Because of the persistence of unemployment and the decline of wheat prices, the fortunes of the Liberal Government appeared to be ebbing. It suffered another severe blow to its prestige as a result of many criticisms directed at the Mackenzie King Government, and particularly the Ministry of Defense under Ian Mackenzie, for the manner in which a contract for 7000 Bren machine guns had been awarded to a Maj. J. E. Hahn of Toronto. These criticisms led to the subsequent passage of a bill creating the Defense Purchasing Board during the spring session of Parliament.

Several new political groups made their appearance in opposition to both the Liberal and Conservative parties. William Herridge, former Minister to Washington, launched the New Democracy party calling for social and economic reforms similar to those of the New Deal in the United States. He formed a united front with the Social Credit party of Alberta and received the unsolicited support of the Communist party. A reactionary movement led by George McCullagh and favoring "big business" interests made its appearance in Ontario. However the war and the overthrow of the Duplessis Government in Quebec restored a large measure of unity within the Liberal ranks. Mitchell Hepburn, Liberal Premier of Ontario, made a political truce with Prime Minister Mackenzie King. The latter announced that the General Election would be postponed until 1940. He indicated that he had no intention of following the precedent set during the World War and forming a National Government.

Toward the end of the year the Conservative party leader opened a vigorous attack upon the government, charging that its war efforts were insufficient and that political patronage had determined war contracts and appointments. On the other hand Communist and pacifist groups attacked the government for its participation in the conflict. On November 21 the Minister of Justice forbade publication and distribution of several

Communist newspapers under the defense of Canada regulations.

A substantial improvement in economic conditions after the outbreak of war strengthened the government's position, but the accumulation of a huge unsold export surplus of some 415,000,000 bushels of wheat in November threatened to have political repercussions. Negotiations were opened to induce Great Britain to purchase this surplus, instead of filling its grain requirements with cheaper wheat from Argentina and other sources. On December 4 it was announced that the British Government had agreed to buy all the bacon and ham Canada could produce during the war.

Cabinet Changes. Mackenzie King sought to strengthen his government by several cabinet changes during the year. On January 23 Norman Alexander McLarty was appointed Postmaster General in place of John Campbell Elliott and James Angus MacKinnon was named Minister without Portfolio. On September 19, in response to criticisms of Defense Minister Ian Mackenzie, the latter was transferred to the Department of Pensions and National Health, and was succeeded by Norman Rogers, former Minister of Labor. Rogers was succeeded as Minister of Labor by former Postmaster General McLarty.

Legislation, etc. The major legislative development of the year, outside of war measures, was the passage during the regular parliamentary session ending June 3 of a series of laws for the assistance of agriculture and other primary producers. Of outstanding interest was the law reducing the government wheat-price guarantee from 80 cents per bu.—paid in 1938—to 70 cents for No. 1 Northern wheat in storage at Fort William. Provision was made for the issuance of participation certificates, enabling growers to share in any surplus resulting from operations of the Wheat Board. (The government incurred a direct deficit of about \$25,000,000 in 1938 through its wheat-price guarantee scheme.)

Other legislation provided for co-operative marketing of agricultural products with a Federal guarantee on the initial payment; granted reduced bonuses to farmers with low wheat yields; extended Federal assistance to producers of high-quality cheese and to the improvement of cheese-factory facilities; established bonuses for producer-fishermen; improved salt fish export marketing facilities; and created a central mortgage bank as an adjunct to the Bank of Canada for the purpose of readjusting debts on farm and certain urban properties and providing cheap mortgage loans.

Provincial-Dominion Relations. New jurisdictional controversies between the Federal and provincial governments cropped up during the year, giving further impetus to the agitation for constitutional reform (see 1938 YEAR BOOK, p. 124). A dispute arose between the Federal and Quebec governments over which was responsible for provision of relief to Eskimos in the Ungava district of Quebec. The Supreme Court ruled that the Federal Government must do so. The Federal Government refused its assent to a projected barter deal between the Manitoba Government and German interests involving wheat and other farm produce. Nevertheless Premier Bracken of Manitoba went ahead with negotiations for the deal until the European war crisis intervened. The Quebec Government concluded an agreement with Italy for the exchange of dried codfish for Italian wines.

Canadian-American Relations. Canada's relations with the United States assumed exceptional importance following its entrance into the European war because of President Franklin D. Roosevelt's statement at Kingston, Ont., in August, 1938, that "the people of the United States will not stand idly by if domination of Canadian soil is threatened by any other Empire." In his review of Canadian foreign affairs before the House of Commons at Ottawa on Mar. 30, 1939, the Prime Minister declared that because of Roosevelt's statement "August, 1938, is as important in North American annals as September (the Munich Conference) was in the annals of Europe."

When the European war began, Canada was exempted from the United States neutrality regulations until after she had formally declared war upon Germany. On September 12 provisions of the United States arms embargo were made applicable to Canada also. The major effect of the embargo was to cut off Canadian purchases of United States airplanes, which were badly needed for the development of the Canadian and Empire air forces. The removal of the embargo in November gave Canada a great advantage over other belligerents in the purchase of war implements and munitions, particularly airplanes.

On September 12 President Roosevelt stated at Washington that Canada's declaration of war had not altered the force of his Kingston pledge. But Col. Charles A. Lindbergh, in his radio address of October 12, presented another facet of Canadian-United States relations that was far from appealing to Canadian opinion. With the exception of a few Duplessis supporters in Quebec, Canadians displayed unanimous resentment at Lindbergh's suggestion that Canada should sever its relationship with Great Britain to eliminate the danger that the United States might be drawn into war through an attack upon Canada by an enemy of Great Britain. The Ottawa correspondent of the *New York Times* summed up the Canadian reaction as follows:

A cross-section of editorial and epistolary opinion would seem to be that the colonel's speech was a tactless and pro-Nazi gesture which, if endorsed by his countrymen would be a disturbing revelation of American imperialism likely to do grave harm to Canadian-American relations, but that it was not so endorsed and should not be taken too seriously.

St. Lawrence Seaway Project. One result of the overthrow of the Duplessis Government in Quebec was the removal of the chief obstacle to the reopening of negotiations between Ottawa and Washington on the St. Lawrence seaway project. Several weeks before the Quebec election, Premier Hepburn of Ontario, the other outstanding opponent of the project, conditionally withdrew his objections. On October 27 President Roosevelt announced that the three United States members of the International (Canadian-American) Joint Commission would be replaced by three government officials in preparation for the resumption of negotiations on the St. Lawrence project. United States exports to Canada were benefited by the removal in the Dominion's 1939-40 budget bill of the 3-per cent special excise tax on all imports except those from a few countries whose goods were subject to the general tariff. A supplementary Canadian-American reciprocal trade agreement was signed Dec. 30, 1939.

Relations with British Dominions. The drastic import control measures introduced during the year by New Zealand (q.v.) adversely affected

Canadian exports to that Dominion, which amounted to more than \$16,000,000 in 1938. The Ottawa Government announced June 27 that it would appoint High Commissioners to South Africa and Ireland immediately and to Australia and New Zealand in the near future. A South African High Commissioner had arrived at Ottawa some months before and an Irish High Commissioner arrived in August. The appointments to Australia, New Zealand and Ireland were announced late in December. For other Empire relations, see GREAT BRITAIN and the several Dominions under *History*.

CANADA, THE UNITED CHURCH OF. The designation applied to the single body formed by the union in 1925 of the Congregational, Methodist, and Presbyterian churches in Canada; the Methodist churches of Newfoundland and Bermuda are also included. Foreign mission work is carried on in Japan, Korea, China, India, Trinidad, and Angola (West Central Africa). In 1938 there were in Canada, Newfoundland, and Bermuda 7423 preaching places (including home missions) in 2829 pastoral charges, 707,264 communicant members, and 1,742,622 persons under pastoral care. A total amount of \$11,671,147 was raised for all purposes. At the Eighth General Council held in Toronto, Ont., in September, 1938, the Rev. John W. Woodside, M.A., D.D., was chosen moderator for the ensuing biennium. Rev. Gordon A. Sisco, M.A., D.D., is general secretary. Headquarters: 421 Wesley Building, Toronto, Ont.

CANALS. Outside the usual activities of the U.S. Army Engineers in connection with inter-coastal waterways, the year has been rather quiet in the field of canal construction. The Florida ship canal project, abandoned a year or more ago, has shown fitful signs of revival, but on May 17 the Senate refused to approve further expenditures, and in view of the apparent determination of the present Congress to curtail expenditures it seems doubtful if this much discussed and partly completed project will be revived.

Reports from Germany indicate that the inter-connecting canals in that country, described in previous YEAR BOOKS, have been an important means of transportation for supplies from Russia and the East. Russia has also been actively engaged in canal work but details are not available. Traffic through the principal canals of the Great Lakes-St. Lawrence waterways in 1939, with 1938 figures in parentheses, were as follows (in tons): Sault Ste. Marie Canals (Canadian and United States locks), 69,850,206 (40,043,629); Welland Ship Canal, 11,727,703 (12,629,054); St. Lawrence Canals, 8,340,165 (9,236,318).

See PANAMA CANAL; BELGIUM under *History*.
JAMES K. FINCH.

CANARY ISLANDS. An archipelago off the coast of Rio de Oro in northwest Africa. Administratively they form two provinces of Spain: (1) Las Palmas (comprising the islands of Gran Canaria, Lanzarote, Fuerteventura, and the islets of Alegranza, Roque del Este, Roque del Oeste, Graciosa, Montaña Clara, and Lobos), area, 1279 square miles; population (1935), 270,033; capital, Las Palmas (83,553 inhabitants) on Gran Canaria. (2) Santa Cruz de Tenerife (comprising the islands of Tenerife, Palma, Gomera, and Hierro), area, 1528 square miles; population (1935), 329,679; capital, Santa Cruz de Tenerife (66,429 inhabitants). Roads had a total length of 653 miles in 1938.

CANCER. See BIOLOGICAL CHEMISTRY; MEDICINE AND SURGERY.

CANTON ISLAND. A coral atoll (2° 49' S. and 171° 43' W.) in the Phoenix group of the central Pacific, midway between Hawaii and New Zealand. It is 29 miles in circumference and has a land mass of from 50 to 600 yards wide which encloses a lagoon of 9 miles in diameter. During 1937 and 1938 the islands of Canton and Enderbury, over which both the United States and Great Britain claimed sovereignty, assumed great importance because of their value as bases for trans-Pacific air services. The two countries in the Anglo-U.S.A. Pact of Aug. 10, 1938, agreed to set up a regime assuring equality of facilities to their respective nations in the field of international aviation and communications, and agreed to leave the question of title in abeyance.

On Apr. 6, 1939, after an exchange of notes between the two countries, it was announced that the formula for the control of the two islands would apply for 50 years and thereafter indefinitely unless terminated or modified. Each government would be represented by an administrative official and the islands would be available for use by civil aviation companies incorporated in the United States or the British Commonwealth of Nations. The agreement states that the arrangement is made by the two countries "without prejudice to their respective claims." On Apr. 13, 1939, the United States granted a license to Pan American Airways allowing them to erect the necessary facilities, and included provisions in the license which would permit the use of the base by a British air transport company upon payment of a reasonable amount to Pan American Airways. A ship containing the necessary structural supplies for the erection of a commercial air base left the port of San Francisco, Calif., for Canton Island on Apr. 29, 1939.

CAPE OF GOOD HOPE. See SOUTH AFRICA, UNION OF.

CAPE VERDE (vúrd) ISLANDS. A dependency of Portugal, 320 miles west of Cape Verde, French West Africa. The islands comprise the Barlevento (windward) group (São Vicente, Santo Antão, São Nicolau, Santa Luzia, Sal, Boa-vista, Branco, and Raso) and the Sotavento (leeward) group (Santiago, Maio, Fogo, Brava, Rei, and Rombo). Total area, 1557 square miles; population (Jan. 1, 1938 est.), 165,000 including 6318 Europeans. Capital, Praia (on Santiago), 6188 inhabitants. The chief products are sisal, castor oil, mustard, coffee, oranges, maize, tobacco, salt, brandy, and hides. In 1938, imports were valued at 107,090,000 escudos (U.S. \$4,744,000) including fuel oil (61,626,000 escudos) and coal (13,798,000 escudos); exports, 117,754 escudos (U.S. \$5,217,000). The escudo averaged \$0.0443 for 1938. The larger part of the exports consisted of the supply of fuel oil, coal, and water to ships. Colored cotton cloth, foodstuffs, iron and steel tubes, and wire were the main imports for local use. The budget for 1939 was 19,452,001 escudos (17,661,748 escudos for 1938). Governor, Maj. A. G. de Figueiredo.

CAPITAL MOVEMENTS, INTERNATIONAL. See FINANCIAL REVIEW.

CARBOHYDRATES. See BIOLOGICAL CHEMISTRY.

CARDINALS. See ROMAN CATHOLIC CHURCH.

CARIES. See DENTISTRY.

CARLETON COLLEGE. A coeducational

college of liberal arts in Northfield, Minn., founded in 1866. The enrollment for the autumn of 1939 was 862. There were 86 faculty members. The endowment amounted to \$3,598,345, and the total income for the year was \$575,418. The library contained 125,461 volumes and 31,974 pamphlets. President, Donald John Cowling, Ph.D., D.D.

CARNEGIE CORPORATION OF NEW YORK. Established by Andrew Carnegie in 1911, this corporation was formed for the advancement and diffusion of knowledge and understanding among the people of the United States and the British Dominions and Colonies. Its total endowment is approximately \$135,000,000, of which \$10,000,000 is applicable in the British Dominions and Colonies. The annual report of the president, Frederick P. Keppel, showed that during the fiscal year 1938-39 the sum of \$4,846,126 was appropriated.

The trustees of the corporation as of Dec. 1, 1939, were: Thomas S. Arbutnot, Vannavar Bush, Nicholas Murray Butler, Samuel Harden Church, Henry James, Walter A. Jessup, Nicholas Kelley, Frederick P. Keppel, Russell Leffingwell, Margaret Carnegie Miller, Frederick Osborn, Arthur W. Page, and Elihu Root, Jr. Officers of administration were: Frederick P. Keppel, president; Robert M. Lester, secretary; and Robertson D. Ward, treasurer. Office: 522 Fifth Avenue, New York City. See ART MUSEUMS.

CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING, THE. A foundation established in 1905 by Andrew Carnegie, who placed an endowment of \$10,000,000 in trust for the purpose of encouraging higher education in the United States, Canada, and Newfoundland. Following its incorporation by Congress in 1906, its resources were increased by a further gift of \$5,000,000 from Mr. Carnegie in 1908 and by appropriations of \$1,250,000 in 1913 and \$12,000,000 in 1918 from the Carnegie Corporation of New York. On June 30, 1939, its endowments and accumulated reserves amounted to \$26,917,932.

The foundation publishes extensive annual reports, which deal with many phases of the educational process. In 1939 it was engaged upon various studies concerning higher education in the United States, professional education, the relations between secondary and higher education in Pennsylvania, and graduate instruction. Dr. Walter A. Jessup is president, and Howard J. Savage, secretary and treasurer. Headquarters are at 522 Fifth Avenue, New York City.

CARNEGIE INSTITUTE OF TECHNOLOGY. A nonsectarian institution for technical education at Schenley Park, Pittsburgh, Pa., founded in 1900. The enrollment for the autumn of 1939 was 5309, including 2389 registered in the regular day courses and 2920 in the evening courses. For the summer session 566 students were enrolled. The faculty numbered 350. The endowment amounted to \$17,464,419, and the annual income was \$1,494,826 (not including student fees). The institute is adjacent to the Carnegie Library of Pittsburgh, which has 450,600 volumes. President, Robert Ernest Doherty, B.S., M.S., M.A., LL.D.

CARNEGIE INSTITUTION OF WASHINGTON. An organization founded in 1902 by Andrew Carnegie "to encourage in the broadest and most liberal manner investigation, research, and discovery, and the application of knowledge to the improvement of mankind." The Institution at-

tempts to advance fundamental research in fields not normally covered by the activities of other agencies, and to concentrate its attention upon specific problems, with the idea of shifting attack from time to time to meet the more pressing needs of research as they develop with increase of knowledge.

Income on investments for the year 1939 amounted approximately to \$1,500,000, and was required almost entirely for support and maintenance of major projects undertaken by the Institution, mostly in the physical and biological sciences. The application of physical methods in study of biological problems has been given special impetus during the past year. Results of its work were made known through technical and scientific journals, its yearbook, and a series of scientific monographs and news releases. To date the Institution has issued over 700 monographic publications.

W. Cameron Forbes is Chairman of the Board of Trustees of the Institution, and Vannevar Bush is President. Other Trustees are: Thomas Barbour, James F. Bell, Robert Woods Bliss, Frederic A. Delano, Homer L. Ferguson, Walter S. Gifford, Herbert Hoover, Walter A. Jessup, Frank B. Jewett, Charles A. Lindbergh, Alfred L. Loomis, Roswell Miller, Henry S. Morgan, Stewart Paton, John J. Pershing, Elihu Root, Jr., Henry R. Shopley, William Benson Storey, Richard P. Strong, Charles P. Taft, James W. Wadsworth, Frederic C. Walcott, and Lewis H. Weed. Headquarters: Sixteenth and P Streets, N.W., Washington, D. C.

CAROLINE ISLANDS. See JAPANESE PACIFIC ISLANDS.

CARPATHO-UKRAINE. See CZECHO-SLOVAKIA.

CARTER, HOWARD. A British Egyptologist, died in London, Mar. 2, 1939. He was born at Swaffham in Norfolk in 1873 and, due to ill health, was educated privately. Attracted toward archaeology he studied under the leading men of his day, and in 1890 made his first trip to Egypt as a member of the Egyptian Exploration Fund Archaeological Survey. He was assistant to Prof. Flinders Petrie in his excavations at Tel-el Amarna for Lord Amherst in 1892, and in the following year again joined the E.E.F.A.S. in its Deir-el Bahari Campaign. From 1900 to 1905 he was inspector general of the Antiquities Department of the Egyptian Government, which he reorganized, and discovered for the Government the royal tomb of Mentuhotep.

From 1907 to 1923, Mr. Carter carried on exploration work in the Valley of the Kings, and for Theo M. Davis discovered the tomb of Hatshepsut, Thothmes IV; and with the Earl of Carnarvon made extensive explorations of the Theban Necropolis and discovered the Valley-temple of Hatshepsut, the tomb of Amenhotep I, the cemetery of the 18th Dynasty Queens, the cliff-tomb of Queen Hatshepsut, all of which was crowned by the discovery in 1923 of the 3000-year-old sepulchre of Tutankhamen. Thereafter, he supervised the examination of the last-named and the removal of its contents to the Cairo Museum.

Mr. Carter's writings included *The Tomb of Thothmes IV* (1904), *The Tomb of Hatshepsut* (1906), *Five Years' Explorations at Thebes* (1912), and, with A. C. Mace, *The Tomb of Tut-ankh-Amen* (1923).

CASE SCHOOL OF APPLIED SCIENCE. An engineering college in Cleveland,

Ohio, founded in 1880. In the autumn of 1939 the enrollment was 1643. The 1939 summer session registration was 230. The faculty numbered 131. The endowment amounted to \$4,135,658. The library contained 34,543 volumes. President William Elgin Wickenden, D.Eng., D.Sc., LL.D.

CASTELROSSO ISLAND. See ÆGEAN ISLANDS, ITALIAN.

CASUALTY INSURANCE. See INSURANCE.

CATALONIA. A region in northeastern Spain, consisting of the provinces of Barcelona, Gerona, Lérida, and Tarragona. Chief city, Barcelona. See SPAIN under *History*.

CATHOLICS. See RELIGIOUS ORGANIZATIONS, ROMAN CATHOLIC CHURCH.

CATHOLIC UNIVERSITY OF AMERICA, THE. A national pontifical institution of higher education, located in Washington, D. C., and founded in 1867 by the Roman Catholic hierarchy of the United States with the approval of the Holy See. The enrollment for the autumn of 1939 was 2060, of which 532 were in the Graduate School, 70 in Canon Law, 87 in Law, 367 in Arts and Sciences, 250 in Engineering and Architecture, 152 in the School of Philosophy, 56 in Social Work, 130 in the School of Nursing, 244 in the School of Sacred Theology, and 172 in the School of Social Science, and 77 in the National Catholic School of Social Service. The summer school enrollment for 1938 was 1868. The faculties number 275 teachers, with 43 additions in 1939. In the library there are 350,000 volumes. Chancellor, the Most Reverend Michael J. Curley, S.T.D., Archbishop of Baltimore; Rector, Rt. Rev. Monsignor Joseph M. Corrigan, S.T.D.

CATHOLIC WELFARE CONFERENCE, NATIONAL. The official agency of the Archbishops and Bishops of the American Hierarchy for the promotion of unity in Catholic work locally and nationally, organized in 1919. The "N.C.W.C.," as it is now popularly known, succeeded the emergency National Catholic War Council, one of the seven agencies recognized by the United States Government for welfare work during the World War.

The Conference is administered by a Board of Archbishops and Bishops elected at the annual meetings of the Hierarchy held in the Nation's Capital each year. The present personnel of the Board, as elected November, 1939, was:

Most Rev. Samuel A. Stritch, chairman of the Administrative Board; Most Rev. John B. Peterson, vice chairman; Most Rev. John A. Duffy, secretary; Most Rev. Francis C. Kelley, treasurer; Most Rev. John Gregory Murray, Department of Catholic Action Study; Most Rev. Hugh C. Boyle, Legal Department; Most Rev. Joseph F. Rummel, Department of Lay Organizations; Most Rev. Edwin V. O'Hara, Social Action Department; Most Rev. Mark Gannon, Press Department. The active executive officer of the Board is the Rt. Rev. Monsignor Michael J. Ready. Rev. Dr. J. Carroll is Assistant General Secretary.

The National Catholic Welfare Conference operates through the following Departments and Bureaus:

EXECUTIVE—Bureaus maintained: *Immigration, Youth, National Center Confraternity of Christian Doctrine, Information, National Catholic Youth Council, Publications, Business and Auditing, and CATHOLIC ACTION, official organ, N.C.W.C.*

EDUCATION—Divisions: *Statistics and Information, Teachers' Registration, Library.*

PRESS—Serves the Catholic press in the United States

and abroad with regular news, features, editorial and pictorial services.

SOCIAL ACTION—Covers the fields of *Industrial Relations, International Affairs, Civic Education, Social Welfare, Family Life and Rural Life.*

LEGAL—Serves as a clearing house of information on Federal, State, and local legislation.

LAY ORGANIZATIONS—Includes the National Council of Catholic Men and the National Council of Catholic Women, which maintain at N.C.W.C. headquarters permanent representations in the interests of the Catholic laity. These councils function through some 4500 affiliated societies—national, State, diocesan, district, local, and parish; also through units of the councils in many of the dioceses.

CATHOLIC ACTION STUDY—Devoted to research and reports as to pronouncements, methods, programs, and achievements in the work of Catholic Action at home and abroad.

The N.C.C.M. maintains at its national headquarters a Catholic Evidence Bureau, sponsors a weekly nation-wide radio Catholic Hour over the network of the National Broadcasting Company, and conducts a Catholic Radio Bureau. The N.C.C.W. maintains in Washington, D. C., the National Catholic School of Social Service.

It is not the policy of the N.C.W.C. to create new organizations.

It helps, unifies, and leaves to their own fields those that already exist.

It aims to defend and to advance the welfare both of the Catholic Church and of our beloved Country.

It seeks to inform the life of America of right fundamental principles of religion and morality.

It is a central clearing house of information regarding activities of Catholic men and women. **CATHOLIC ACTION** records monthly the work of the Conference and its affiliated organizations. It presents common needs and opportunities. Its special articles are helpful to every Catholic organization and individual.

At their 1939 general meeting, the Bishops had the satisfaction of receiving from His Holiness Pope Pius XII in an Encyclical address "To the Church in the United States," a special commendation for their joint interest in and support of the Conference to which His Holiness referred as an agency which supplies "a ready and well-adapted instrument for your Episcopal ministry." Previously the Holy Father had praised "the wisdom and foresight" with which the members of the Hierarchy are "meeting the problems of these changing times."

Reviewing in their annual reports the manifold activities of the Conference, the Administrative Board was able to report to the annual general meeting of the Bishops in November that the work of the National Catholic Welfare Conference is "well organized" and that "the continuing service rendered to vital Catholic interests constitutes strong defense for the welfare of the Church in our country."

CATSKILL AQUEDUCT. See **AQUEDUCTS; TUNNELS.**

CATTLE. See **DAIRYING; LIVESTOCK.**

CAUSES CÉLÈBRES. See **LAW.**

CAYMAN ISLANDS. See **JAMAICA.**

CCC. Civilian Conservation Corps (q.v.). Sometimes used also for the Commodity Credit Corporation (q.v.).

CELEBES. See **NETHERLANDS INDIES.**

CELEBRATIONS. See **FAIRS AND EXPOSITIONS; GOLDEN GATE INTERNATIONAL EXPOSITION; NEW YORK WORLD'S FAIR; ARIZONA; DELAWARE; RUBBER; FRENCH LITERATURE; PHOTOGRAPHY; STAMP COLLECTING.**

CENTRAL AMERICA. See **BRITISH HONDURAS, COSTA RICA, GUATEMALA, HONDURAS, NICARAGUA, PANAMA, SALVADOR, EL.**

CENTRAL BANKING POLICIES. See **INTERNATIONAL BANKING AND FINANCE.**

CEREALS. See **AGRICULTURE; CORN; WHEAT; ETC.**

CESPEDES Y QUESADA, CARLOS MANUEL DE. A Cuban statesman, died in Havana, Mar. 28, 1939. Born in New York, Aug. 12, 1871, the son of the first president of Cuba, he was educated in the United States, France, and Germany. Returning to Cuba, during 1895-98 he served as a colonel in the Army and took part in the last revolution for independence, was a member of two revolutionary assemblies, and was governor of the province of Santiago de Cuba. He was vice-president of the House of Representatives under the Republic from 1902 to 1908, and then entered the diplomatic service as envoy extraordinary and minister plenipotentiary to Italy (1909-13), to Argentina (1913-14), and to the United States (1914-22). During this period he was a special envoy to Greece in 1912, president of the Cuban delegation to the 2d Pan American Scientific Congress (1915) and to the 2d Pan American Financial Congress (1920), and was chairman of the Cuban mission that sold Cuban sugar to the United States and the Allies in 1917-18.

In 1922, Cespedes was appointed secretary of state of Cuba, and in 1927 he went to France as minister to that country, returning in 1931. Out of the political arena for a time, in August of 1933, after the fall of the Machado regime, he was selected as provisional president. A coup d'état by the students and the army caused his displacement in September. During his short tenure, he and his cabinet worked indefatigably to restore order. In 1934 he was appointed Cuban ambassador to Spain, and on his return in August, 1935, he formed the Centrist party, but after the failure of that party in the 1936 elections, he retired from active political life.

CEYLON, sê-lôn'. A British self-governing insular colony near the southern extremity of India. Area, 25,332 square miles; population (Jan. 1, 1938 estimate), 5,780,000 compared with (1931 census) 5,312,548. During 1937 there were registered 216,072 births, 124,210 deaths, and 33,205 marriages (including 2333 Muslim marriages). Buddhism and Hinduism are the chief religions. Chief towns: Colombo (capital), 310,400 inhabitants in 1936; Jaffna, 47,700; Moratuwa, 34,900; Galle, 38,000; Kandy, 40,100. In 1937 there were 784,185 students attending the 5839 primary and secondary schools; the university college had 586 students enrolled for 1937-38.

Production and Trade. Agriculture is the most important industry in the island, the area under cultivation being about 3,500,000 acres. The chief agricultural products (with 1938 production figures, in metric tons) are tea (106,900, exported), copra (197,000), rubber (60,000), rice, coir, cinnamon, cacao, tobacco, citronella. Livestock (1937): 1,603,500 cattle, 60,500 sheep, 219,500 goats, 35,900 swine, and 1300 horses. In 1937 there were 229 plumbago mines in operation and 17,380 tons of plumbago were exported. Ilmenite and monazite exist in commercial quantities. There are numerous quarries in which small gems such as rubies, moonstones, cat's-eyes, and sapphires are obtained. Factories for making rubber goods, cigarettes, bricks, and tiles, ghee, and for canning cashew nuts have been erected. Cottage industries include the making of jewelry, baskets, tiles, pottery, coir yarn, and metal and lacquer work. In 1938, imports were valued at Rs235,529,101; domestic exports, Rs263,534,522

of which tea accounted for Rs172,420,857 (rupee averaged \$0.3733 for 1937; \$0.3659 for 1938).

Communications. In 1938 there were 17,806 miles of highways, and 951 miles of railways (including 117 miles of narrow gauge). Shipping aggregating 12,054,181 tons entered the ports during 1937. On Feb. 28, 1938, the new air service linking Colombo with the Empire air route from Southampton, England, to Karachi, India, was inaugurated.

Finance. Budget (1938-39): revenue, Rs117,426,650; expenditure, Rs128,952,900 (including Rs5,471,160 of loan-fund expenditure). The net public debt on Sept. 30, 1937 amounted to Rs134,625,200. For 1939-40 revenue was estimated at Rs116,000,000 and expenditure at Rs120,000,000.

Government. The government is administered by a governor, assisted by a state council of 61 members (50 elected on a territorial basis, 8 nominated unofficial, and 3 officers of state). This state council is divided into 7 executive committees in charge of various subjects, and the chairmen of these committees are ministers for the subject concerned. A government agent is at the head of each one of the 9 provinces into which the island is divided for administrative purposes. Governor, Sir Andrew Caldecott (assumed office, Oct. 16, 1937).

History. The British defence estimates for 1939-40 included the sum of £1,500,000 to be used for the construction of a new naval and air base at Trincomalee. The recommendations of Sir Andrew Caldecott, the governor, for the abolition of the executive committees and their replacement by a cabinet formed by the chief minister have been published in *Correspondence Relating to the Constitution of Ceylon* (H. M. Stationery Office, London; 1939).

Maldivé Archipelago. A chain of some 2000 coral islets (about 200 inhabited), 400 miles southwest of Ceylon, of which they are a dependency. Area (land), 115 square miles; population (1931), over 79,000 Moslems. Capital, Malé. The main products are coconuts, millet, dried fish, cowrie and tortoise shell, and edible nuts. The modified constitution provides for an elected Sultan, a people's assembly of 33 members (28 elected and 5 nominated), and a cabinet of 4 ministers. Sultan, Hasan Nuruddin Iskander II (elected, Mar. 12, 1935; assumed Sword of State, July 21, 1938).

CHACO BOUNDARY SETTLEMENT.

See BOLIVIA under *History*.

CHAD. See FRENCH EQUATORIAL AFRICA.

CHAHAR. See CHINA under *Area and Population* and *History*.

CHAIN STORES. See KENTUCKY; *MARKETING*.

CHAMBER OF COMMERCE OF THE UNITED STATES. A national federation of trade associations and local, state, and regional commercial organizations, established in 1912 for the formulation of business opinion on national economic questions. The membership in 1940 consisted of more than 1650 chambers of commerce and trade associations.

The Chamber maintains twelve departments, covering main divisions of business activity: Agriculture; Construction; Commercial Organization; Manufacture; Domestic Distribution; Finance; Foreign Commerce; Insurance; Natural Resources Production; Trade Association; Transportation and Communication; Research. It publishes a monthly magazine, the *Nation's Business*,

and the *Washington Review*, the latter dealing with the relations of government and business.

In 1939-40 the Chamber, through its member organizations, initiated a nationwide effort to bring about a better public understanding of business operations and to center attention upon national economic policies from a local and regional viewpoint. It continued its effort to reduce federal expenditures and to promote the development of a sound fiscal system. Defects in regulatory legislation and its administration which operate to the detriment of business were brought to the attention of congressional committees and administrative agencies.

The work of the Chamber is directed by 58 officers and directors and upward of twenty standing and special committees with an aggregate membership of more than 300.

W. Gibson Carey, Jr., of New York City, is President of the Chamber. John W. O'Leary, of Chicago, is Chairman of the Executive Committee and active resident officer. Vice-Presidents are: Thomas H. McInerney, New York; Clem D. Johnston, Roanoke, Va.; James S. Kemper, Chicago; O. J. Arnold, Minneapolis; Joseph W. Evans, Houston, Texas; W. C. Mullendore, Los Angeles.

CHANDERNAGOR. See FRENCH INDIA.

CHANDLER, COL. CHARLES DE FOREST, U.S.A., RET. An American army officer and aeronaut, died in Washington, May 17, 1939. Born in Cleveland, Dec. 24, 1878, he was educated in the local schools, and in 1898 was a 1st lieutenant in the U.S. Volunteer Signal Corps, serving in the Spanish-American War and the Philippine Insurrection. Honorably discharged in 1899, he studied at the Case School of Applied Science until 1901 when he joined the U.S. Army as a 1st lieutenant. During 1903-04, he commanded the United States cables ship *Burnside* during the laying of the first submarine cables to Alaska.

Becoming interested in flying, he made his first balloon flight in 1906 and in the following year was appointed the first head of the Aeronautical Division of the Signal Corps. In that year he was, with J. C. McCoy, the winner of the Lahm Trophy for balloon racing in a 500-mile flight from St. Louis to Walton, W. Va. He was a member of the board of officers that conducted the Wright airplane trials at Ft. Myer, Va., in 1909. Graduating from the Army Signal School at Ft. Leavenworth, Kans., in 1911 he was commander of the Army experiment aviation school at College Park, Md., until 1913. After service in Mexico, he was placed in command of the army balloon field at Fort Omaha, and, in 1917, was made chief of the balloon section of the U.S. Army Air Service in France with the rank of Colonel. For his World War record he was awarded the French Legion of Honor and the American Distinguished Service Medal. On July 1, 1920, Colonel Chandler was transferred to the air service, and on October 18 he retired from active service.

One of the founders of the Institute of Aeronautical Sciences, Colonel Chandler held pilot certificate No. 8 of the Fédération Aéronautique Internationale, and was co-author of *Free and Captive Balloons* and of *Balloon and Airship Gases*, both in 1926.

CHANNEL ISLANDS. See GREAT BRITAIN.

CHAUTAUQUA INSTITUTION. An educational movement established on Chautauqua Lake, Chautauqua, N. Y., in 1874 by Lewis Miller

and Bishop John H. Vincent, both prominent in the Methodist Episcopal Church. Originally for Sunday school teachers, it developed into an institution affording during July and August each year a correlated lecture series, summer school conducted by New York University, operas, and plays. Its summer music festival features a symphony orchestra, concerts, and recitals. Annual attendance is 50,000, the schools enrolling 1600. Present officers are: S. M. Hazlett, Chr. Ex. Bd.; George E. Vincent, honorary president; Arthur E. Bestor, president; Charles E. Pierce, secretary; and Gerald M. Lynch, treasurer.

CHECHEN-INGUSH AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

CHECKERS. See SPORTS.

CHEESE. See DAIRYING.

CHEKIANG. See CHINA under *Area and Population*.

CHEMISTRY. Outstanding event in 1939 was the tapping of nuclear energy by the bombardment of uranium, protoactinium and thorium with neutrons, thereby releasing 175,000,000 electron volts of energy for each atom split. A satisfactory mechanism proposed by Bethe of Cornell to account for the production of solar and stellar energy by the transmutation of hydrogen into helium has been hailed as the greatest contribution in astro-physics for the past 15 years.

Apparatus. J. Allen designed a vacuum tube containing a series of amplifying beryllium plates which can measure the flow of one electron every five minutes; the General Electric Company produced a 100,000-hour thyroton, a self-regulating 25 million candle-power mercury-arc searchlight, sealed-beam headlights, and a tiny million-lumen photoflash bulb; the Netherlands announced a lamp containing tantalum chloride or boron nitride heated to incandescence, better than tungsten. Other electrical equipment included a 1,250,000-volt electrostatic X-ray generator, one-tenth the size of its 1937 one-million volt precursor at the Huntington Hospital; a sensitive short-circuit detector in chlorinated transformer oils, the hydrochloric acid which is evolved dissolving a zinc-oxide insulation on the detector, thereby operating a relay which shuts off the transformer; an electric micrometer, measuring five-millionths of an inch; a method by W. L. Bragg for converting an X-ray diffraction pattern into an optical image; and a novel arrangement of a horizontal electrical field for measuring the charge on an oil drop, by Labby and Hopper who also described an un-jacketed thermostat for maintaining temperature constant to within $\pm 0.002^\circ$. B. Johnson described a lens system of quartz and synthetic LiF crystals giving complete anachromatism between 2749 and 5461 Å.; Rosenberg achieved accuracies of ± 0.2 and ± 6 per cent at pressures of 10^{-2} and 10^{-6} mm. in an improved McLeod gauge; using a pierced membrane to prevent the creeping of helium II, Cooke and Hull obtained low temperatures with a relatively simple apparatus. New equipment include a sintered nickel filter resistant to lye at 500°C .; a gas mask for helium-oxygen treatments, only one-third as expensive as tents; a viscosimeter consisting of several rotating disks.

Astronomy. In *Physical Review*, Volume 55, page 434, 1939, Bethe proposed a theory which has been recognized as an outstanding contribution. It is a mechanism for the transmutation of hydro-

gen into helium, with carbon and nitrogen playing the role of catalyst, to produce energy in the stars. The mechanism gives the correct rate of energy production in the sun at its central temperature of 20 million degrees. Steps in the Bethe mechanism are (1) $\text{H} + \text{C}^{12} \rightarrow \text{N}^{13}$; (2) $\text{N}^{13} \rightarrow \text{C}^{13} + e^+$; (3) $\text{C}^{13} + \text{H} \rightarrow \text{N}^{14}$; (4) $\text{N}^{14} + \text{H} \rightarrow \text{O}^{15}$; (5) $\text{O}^{15} \rightarrow \text{N}^{15} + e^+$; (6) $\text{N}^{15} + \text{H} \rightarrow \text{C}^{12} + \text{He}^4$. The dynamics of the process are also consistent with the mass-luminosity relations observed in other stars. However, certain faint stars may produce energy by the reaction $\text{H} + \text{H} \rightarrow \text{D} + e^+$.

Mohler attributed ionization 150 miles above the earth to sunspot radiation. Coblentz recommended rhodium rather than silver for telescope mirrors in the visible spectrum; chromium is satisfactory in the ultra-violet. A new optical method using a wire instead of a knife edge in testing mirrors during grinding promises to reduce grinding time to one-third. Wildt explained the range of colors on Jupiter by the action of sodium on gaseous and liquid ammonia. Nova RR Pictoris (1925) spectra, were identified by Bowen and Edlen as forbidden transitions in the $3d^2$ level of the vacuum spark spectrum of iron. Dunham calculated that a millionth of a cubic meter between the earth and X2-Orionis contains 7 electrons, 7 H, 150 Na, 5 K, 3 Ca, and 0.03 Ti atoms.

By September, drillings in the great Arizona crater had disclosed no nickel-iron alloy. Paneth issued an important formula summarizing radioactive methods for determining the age of meteorites. From new alpha-helium and radium-thorium-helium measurements, Urry and collaborators lowered many geological horizons determined from radium-helium accumulation in igneous rocks. The majority of the radium liberated from uranium in sea water is precipitated with iron in marine clays and deposits; since Foyn and collaborators found sea water contained only 0.03 to 0.02×10^{-12} radium.

Isotopes. The value 6900:1 by Gabbard and Dole and by Hall and Jones for the H:D ratio in water was reconfirmed by Dole this year. This would change the atomic weight to 1.0080, instead of the accepted value 1.0081 based on a ratio of 5000:1. Hydrogen of mass 3 was prepared and found to be radioactive. With an improved thermo-diffusion-siphon method Clusius and Dickel using a 36-inch tube obtained 8 cc. of 99 per cent HCl^{37} daily. They also separated sodium chloride-water, acetone-water, and light-heavy water. Relatively large amounts of C^{13} were obtained by chemical separation. A systematic study of the ratio of $\text{C}^{12}:\text{C}^{13}$ was carried out by Nier and Gulbransen. C^{13} is more abundant in limestones and less abundant in plants, with a maximum variation of 5 per cent. Nier also studied the isotopic ratio of uranium and lead. Reinvestigation of the isotopic abundance of europium by Lichtblau pointed to an atomic weight of 151.95 or 151.92. (See BIOLOGICAL CHEMISTRY.)

Kinetics. Ogg reviewed the energetics of hydrolysis of alkyl halides and concluded that CH_3OH_2^+ is much more probable than CH_3^+ , and that mechanisms involving CH_3^+ should be abandoned. According to Semmens, polarized infra-red light from heated platinum gauze increases the hydrolysis of starch in the plant, in the starch grain, and in films of boiled starch. James, studying the reduction of silver ions by hydroquinone on colloidal catalysts in gelatin and

gum arabic, showed the primary step is the adsorption of silver ions on the catalyst. The mechanism of reaction of Wackenroder's solution was elucidated by Stamm and Wintzer. Stoddard showed that an adsorbed film of oxygen poisons the heterogeneous reaction between oxygen and nitric oxide. Griffith and co-workers detected the formation of ozone during the non-explosive oxidation of carbon disulfide on Ni_3S_2 catalyst. Ethylene suppresses the homogeneous oxidation. The polymerization of unsaturated liquid hydrocarbons by neutrons and ionizing radiations was investigated by Hipwood and Phillips. Farquharson and Ady demonstrated the fall in diamagnetism, corresponding to the formation of paramagnetic centers, during the polymerization of dimethyl dibutylene. The induction period terminates when the concentration of centers equals the minimal concentration of catalyst at which a smooth curve would be obtained. Vitamin B₁ accelerates the complete oxidation of acetic acid by vitamin-starved propionic acid bacteria according to Quastel and Wehley.

Medical Miscellany. Aluminum dust is successfully preventing and remedying silicosis by forming in the body fluid aluminum hydroxide which absorbs the quartz particles on its surface. The aluminum hydroxide was identified in the Bell Telephone Laboratories by electron diffraction. The quantity of aluminum must be at least 1 per cent of the weight of the quartz dust, and preferably distributed with it, although it will also remove quartz dust previously inhaled.

Dounce and Frampton showed that horse liver catalase annuls the poisonous property of potassium cyanide by destroying hydrogen peroxide formed when cyanide attacks cells in the blood. Migraine headaches were stopped by breathing gases low in oxygen. Nitrogen breathing was introduced to relieve schizophrenia insanity in place of insulin shock or the metrazol treatment which often induces convulsions. All three treatments act by cutting down the supply of oxygen to the brain.

Luyet reported that animal and plant tissues frozen in liquid air regain vitality by quick warming, whereas slow warming dehydrates and kills them. Daily doses of radioactive sodium from the California cyclotron is keeping leukemia patients alive in place of daily X-ray treatments.

McAlister demonstrated that wheat seedlings continue to utilize carbon dioxide for a short interval after they are plunged into darkness, due to the presence of a new chemical, not isolated, which activates the chlorophyll.

George Wald of Harvard identified three light-filter pigments in the cones of the chicken eye, and finally the first light-sensitive pigment ever found in the eye cone, which he named "iodopsin." The spectrum of hemoglobin in the red blood cells is identical with that photographed extracellularly, according to Drabkin.

Slade, Watson, and Ferguson found that treatment with cold lye increases the digestibility by sheep of oat straw 100 per cent, and of wheat straw 150 per cent.

Monomolecular Films. In his address to the British Association in August, Rideal reviewed the research in monolayers of macromolecules such as proteins, methylated starches, and cellulose. These form two-dimensional gels, prototypes of cell membranes. Orientation of the molecules in layers has a bearing on activation energy involved in enzyme and photochemical re-

actions of these layers. Stable complexes, formed by orientation of the penetrant in the monolayer, find analogy to lysis, agglutination, sensitization, and drug action. Penetrants with more than one polar group interlink with the monolayers. Schulman described application of the Langmuir-Blodgett technique in determining the shape and chain-branching in elaborate molecules such as phloic acid, a toxin from tuberculosis bacillus; data which could otherwise be obtained only by elaborate degradation experiments.

Gregg and Widdowson determined condensation coefficients of stearic acid and arachidic acids, and the free-acid content of barium soaps by submitting molecular films to high vacuum. Jenkins and Norris developed an optical method for measuring the thickness of protein films only a few molecules thick. Schaefer reported photochemical decomposition of layers of stearic acid. Cartwright and Turner, at M.I.T., and Blodgett at the General Electric, have reported films which reflect 85 per cent of the green light and transmit 90 per cent or more of the red light. In some instances transmissions of 99.8 per cent were achieved. Germer reported that monomolecular films of heavy gold and beryllium gave diffraction patterns for three-dimensional crystals.

New Substances. Laubengayer and Engle conducted an X-ray phase study of $\text{Ga}_2\text{O}_3 - \text{H}_2\text{O}$, and established the existence of $\text{Ga}(\text{OH})_3$, and of two forms of Ga_2O_3 . Two non-stoichiometric ranges for chromium oxide, $\text{CrO}_{2.2-2.6}$ and $\text{CrO}_{1.7-1.9}$, were found by Cameron, Harbard, and King. Jezowska and Iodko characterized certain oxy- and hydroxy-halides of rhenium. At Johns Hopkins, Corwin and Ellington discovered a fluorescent yellow compound having only 12 atoms in its basic nucleus. A simple process for making titanium dioxide which darkens in daylight was described by Williamson.

Siegel of Westinghouse produced four-inch single crystals of copper-gold alloy. Muller introduced diamond-metal, a special alloy in which diamonds are set at high temperature and pressure.

By combination at 1800°C ., tantalum pentoxide was formed as golden yellow prisms, or sheets; melting point 365°C .; specific gravity 4.68. It decomposes into tantalum triiodide, hydrolyses in the air, and reacts with oxygen to give tantalum pentoxide.

Nuclear Changes. Hailed as the most important discovery since radioactivity was discovered at the turn of the century, and high light of 1939 has been the release of large amounts of energy from the splitting of uranium. Otto Hahn in Berlin observed in December, 1938 that under low speed neutron bombardment, uranium split into barium, perhaps krypton, and a neutron with a tremendous increase in energy over the bombarding neutron. This energy was so large that eight pounds of uranium would release as much energy as the 6300 tons of fuel oil consumed by the Queen Mary in a single Atlantic crossing. By January this had been confirmed in Bohr's laboratory in Copenhagen, and in various institutions in the United States. Scientists at the Carnegie Institute, and later in August Fermi, Anderson, and Szilard at Columbia reported that there was a [20 per cent] gain in neutrons emitted, making possible a branching chain of reactions which could lead to enormous decompositions of the uranium. The elements now identified from the splitting of uranium are:

barium, lanthanum, strontium, yttrium, xenon, antimony, iodine, rubidium, and cesium, plus a neutron. The total weight of emitted particles is always 239. The total energy of the splitter particles, 1.75 Mev (Million electron volts), is 25 Mev less than theory. Adler and von Halban in France found that cadmium placed in the neutron path became heated.

At the Carnegie Institute it was shown that thorium could be split both by slow and fast neutrons. Protoactinium can also be split.

As a result of the uranium splitting, several questions were raised. The formation of trans-uranium elements by Fermi, pioneer in the bombardment of uranium by neutrons, was questioned by one of his former students, Segre. Fermi had originally failed to find barium, because he had been looking for smaller changes in atomic weights. Again Libby showed that the new transmutation did not disqualify the uranium-lead time-clock method of determining the age of the earth, inasmuch as a natural splitting of uranium by cosmic neutrons would be negligible. Finally astronomers utilized this new knowledge when Cernuschi suggested the origin of cosmic rays from atom smashing of super-heavy elements, atomic weight 26,000 in dwarf stars.

The new 60-inch 220-ton cyclotron just completed by Lawrence of California is producing nearly 50 Mev alpha particles and 25 Mev deuterons. One of its first tasks is to measure the magnetic moment of the neutron. Slightly larger machines are under construction in Japan, at the Carnegie Institute, and in Manchester, England. Lawrence is raising \$750,000 for a 2000-ton 100 Mev machine.

Transmutations this year include platinum into radioactive gold by Pegram; bismuth and lead bombarded with helium to give a substance emitting alpha particles; production by Alvarez and Cornog of radioactive hydrogen of mass three, and an unusual helium of mass three; bombardment of silicon mass 28 by the helium to produce radioactive phosphorus which broke down into silicon of mass 30; and transmutations with electrons for the first time, reported by Notre Dame scientists who changed beryllium, mass nine, into two atoms of helium each with mass four and a neutron. This latter is also a new source of neutrons.

L. P. Smith at Cornell has completed a linear resonant accelerator, which is claimed to have certain advantages over the cyclotron. Only eight feet long and six inches in diameter, and using a short-wave radio generator to provide the alternating potential, this machine accelerates the projectiles in a straight line, stepping them up to half a million electron volts.

Yukawa who first postulated the mesotron (meson) suggested that its radioactive half-life is inversely proportional to its weight, the best value for which to date is between 100 and 160 times that of an electron. The mean life of the mesotron was found to be 25 ten millionths of a second. Automatic cosmic ray recorders indicated greatest mesotron production at the very top of the atmosphere by bombardment of molecules by incoming 2 to 6 Mev cosmic rays, and no production below 14,000 feet.

Bacher and Swanson at Cornell achieved a distinct collimation of neutrons into a beam which escapes through a tube surrounded by a thick wall of water.

Physical Properties. Shankman and Gordon found the vapor pressures of 3 to 23 molar sulfuric acid at 25° disagree with E.M.F. measurements. Dissociation pressures of greenish copper pentadecaterate and tridecaterate were studied by Schacherl in the range 20° to 60°C. D₂O is bound more firmly than H₂O.

Bingham and Stookey have shown that the fluidity (θ) and temperature (T) bear the simple relationship $\theta/T = a + bT + \dots$ for many solutions and liquids, excepting alcohols. a is a function of the homologous series and b a function of the molecular weight, so that viscosity can be calculated for any member of a non-associated series up to 10 carbon atoms at any temperature. Sibaiya and Rao derived a simple formula connecting surface tension with molecular mass and the Lindemann frequency. Good values were reported for the 45 cases investigated.

Conflicting data on the viscosity of helium was corrected by Giauque, who showed viscosity to be decreasing rapidly and approaching zero at 0°A. Shalyt related a change in magnetic susceptibility and specific heat for nickel, cobalt, ferrous and chromium chlorides at liquid hydrogen temperatures. He explained it as quenching the orbits of metallic ions in the electric field of the crystal.

Poulter at the Armour Institute of Technology has adapted the spectrograph, viscometer, and other laboratory appliances to the study of materials under pressure as high as 100,000 atmospheres.

Van Praagh reported quartz dust heated to 300° in vacuo does not affect the pH of water; and suggested absorbed CO₂ caused acidity.

Rakestraw, Herrick, and Urry showed that the Atlantic and Pacific waters are saturated with helium and neon at depths up to 3000 meters. This differs from the distribution of oxygen which is completely lacking in some Pacific samples.

The specific heat of methane had two maxima between 12° and 30°K at pressures up to 2000 kg/cm² according to Trapenynikowa and Nil-jutin. D substituted for H has the same effect as increasing the pressure of CH₄. Variation with temperature of the specific heat of potassium dihydrogen phosphate showed a strong anomalous increase at the Curie point, according to Bantle and Scherrer. Rossini and co-workers provided important new data on the thermochemistry of diamond, graphite, and cokes.

Friedman and Carpenter discussed conditions under which the Stokes-Einstein diffusion equation could be correctly applied to substances with molecular weights as low as 180.

The following photochemical investigations were reported: the first pattern of a super-cooled liquid, in this case liquid sulphur at 30° submitted by Das and Gupta; spectroscopic analysis of viruses proteins and nucleic acids by Lavin; infra-red absorption of carboxylic acids by Davies and Sutherland; reflecting power of evaporated metal films from the visible to 450 Å by Sabine. Horodniczy and Jablonski reported that the broadening of the 2537 mercury line by argon was greater than predicted by Lorentz and Weisskopf. Increased absorption of supersonics by carbon dioxide subjected to its infra-red vibrational frequencies was observed by Richardson.

Structure of Inorganic Compounds. Raman and infra-red spectra of triborane triamine, B₃N₃H₆, which is isoelectronic with benzene, was measured by Crawford and Edsall. They calculated free constants and fundamental fre-

quencies, and noted an isotopic effect for boron. Comparison with benzene lead them to accept the benzene frequencies of Lord and Andrews.

Ubbelohde and Woodward found that when deuterium replaced hydrogen in potassium dihydrogen phosphate, a new crystal structure was set up, giving further evidence of a difference between H and D bonds in crystals.

Friend and Allchin attributed the blue and red color of celestine to colloidal gold. Haberlandt and Kohler of Germany showed that 0.01 per cent of divalent europium in certain feldspars caused blue luminescence in ultra-violet light.

Good X-ray analysis by Powell and Ewens showed iron carbonyl to be $(\text{CO})_3\text{Fe}(\text{CO})_3$. It is diamagnetic because of coupling of electron spins.

Bhatnagar obtained evidence from magnetic susceptibility that manganese in borax glasses is divalent. Using heavy oxygen, Herbert and Blumenthal showed that trimethyl phosphate hydrolyses by rupturing at the P-O bond. From magnetic and other evidence, Krishnan concluded that octahedra of water molecules surrounding the cation in iron and rare earth salts are asymmetric.

Emission spectrum of AlH measured by Sten-vinkel indicated an activated state with several anomalies. Randall and Wilkins presented luminescence and photo-conductivity of excitation states in solid salts of uranium and tungsten activated by manganese.

Structure of Organic Compounds. Little has been accomplished on the structure of polypeptides since the days of Emil Fischer. This year a discovery of unusual promise was achieved by E. Pacsu, who thermally condensed tri- and hexa-peptide esters of glycine to give 3×2^a esters. The final product contained 96 units, one-third the Svedberg unit of 288. His experiments contradicted the cyclol structure proposed by Miss Winch. Frankel and Katchalski also reported condensing amino acid esters to hitherto unknown polypeptide esters of considerable chain length. Allbrecht and Corey conducted an X-ray analysis of glycine. The structure consisted of continuous layers of nearly flat glycine molecules held together by H bonds between adjacent N and O atoms. Interatomic distances between all atoms were given.

Serious doubt was cast on Willstätter's structure for 1,3,5,7 cyclo-octa-tetrene by the discovery of Hurd and Drake that conjugated unsaturation does not exclusively result during pyrolysis of a functional group in the quaternary hydroxide molecule. They found that 1,3 butadiene was not the exclusive product from the pyrolysis of 2,3, butane-bis-(trimethyl ammonium) hydroxide.

Brigl, Gronemeir, and Schultz have obtained an ethyl-thiogluco-side with properties differing from the α - and β -forms described by Schneider and Sepp. They claimed that their new compound possesses pyranose ring structure, whereas Schneider's α -compound is a furanose. The same observations were reported almost simultaneously by Pacsu who, in 1937, established that Schneider's compound is a furanose and not a normal pyranoid structure. Brigl, Gronemeir, and Schultz also prepared a new glucofuranose mono-acetoneglucose. The specific rotation of the ethyl-thiogluco-side is $+268.8^\circ$, which is 100° higher than Hudson's rule would predict. Haskins and Hudson obtained a 90 per cent yield of l-tartaric acid by resolving racemic acid with 2(d-glucido-

gluco-hexa-hydroxyl)-benzimidazole. Cox and Jeffrey showed that chitosamine is a derivative of glucose, demonstrating the pyranose sugar ring, and showing that in α -glucose derivatives the groups attached to first and second carbons are in the cis position.

From spectrum analysis, Shingu concluded the chelate structure of o,o'-dioxyazo benzene is mobile compared to o-mono-oxyazo compounds. Douglas Clark extended his work on dissociation energy and internuclear distances of C-C linkages in both the ground and excited states. Lemberg, Norrie, and Legge found that catalase contains one bile pigment haematin group and three protohematin groups. Perutz obtained the absorption spectrum of a single crystal of hemoglobin and of other derivatives in polarized light.

From X-ray and magnetic measurements Knaggs and Lonsdale concluded that crystalline benzil molecules are skew-shaped; this agrees with recent dipole measurements.

Neurath applying the Perrin diffusion equation, showed with few exceptions protein molecules exhibit high dissymmetry. Cleavage occurs only in directions parallel to the major or minor molecular axis. Cytochrome C, gliadin and erythrocrucorin with molecular weights of 15,600, 26,000, and 31,400 all have a common short diameter of about 18 Å.

Awards and Medals. The following awards were made for 1939 unless otherwise dated. In each case the name of the award, the committee making the award, the recipient, and the nature of the researches are listed. The American Association \$1000 prize to N. Maier for induced neurosis in rats; the Cameron Prize of Edinburgh University to G. Domagk for protosil from which sulfanilamide and related materials are made; the Cannizzaro prize in Rome to Otto Hahn of Berlin; the Cleveland Medal to Eve Curie for the biography on her mother; the Davy Medal of the Royal Society of London to James McBain for colloidal electrolytes; the Eli Lilly Co. \$1000 award to George Wald of Harvard for the relation of Vitamin A to the human eye; the Anna Fuller Memorial Prize, to five doctors of the Research Institute of the Royal Cancer Hospital of London; the Willard Gibbs Medal of the Chicago Section of the American Chemical Society to D. D. Van Slyke for his chemistry of proteins, enzymes, blood, and metabolic conditions of diabetes and nephritis; the 1940 Willard Gibbs Medal to V. N. Ipatieff of Universal Oil Products Co. for high-pressure synthesis, catalysis, and polymerization; the Hoffmann Memorial Medal of the German Chemical Society to A. Szent-Gyorgi; the Hillebrand Prize of Washington to Gilchrist and Wichers for their paper on a new system of analysis of platinum metal; the Morrison Prize of \$500 to H. A. Bethe for his theory of solar energy (see above, under *Astronomy*); the 1938 Nobel Prize in Chemistry to Richard Kuhn of Heidelberg for his chemistry of enzymes, stereochemistry, polyenes, cumulenes, vitamins, and carotinoid; the 1939 Nobel Prize in Chemistry divided between A. Butenandt of Berlin for preparing testosterone and androsterone, the latter from kidney excretions; and L. Ruzicka of Zurich for preparing testosterone, male sex hormone from cholesterol; the 1939 Nobel Prize in Physics to E. O. Lawrence of California for the cyclotron; the 1939 Nobel Prize in Medicine to G. Domagk for protosil and its derivatives; the Pasteur Medal of Paris to Adolf Windaus for his

lectures on vitamins; the Perkin Medal of the Society of Dyers and Colourists to J. Baddiley, who built up British dyestuffs industry; Royal Medals to Dirac for quantum mechanics, and Keilin for his demonstration of the role played by cytochrome in oxidation-reduction mechanisms in the living cell; Research Corporation \$2500 Award and Medal to H. S. Taylor for catalysis; and the Rumford Medal of the A.A.A.S. to G. R. Harrison for his gigantic catalogue of spectral lines.

The Paris Academy of Sciences in December, 1938, awarded the Montyon Prize to the late R. Schmutz for detection of gases; the Jecker Prize to A. Wahl for work on indigoids; the LaCaze Prize to P. Jolibois for inorganic chemistry; the Cahours Foundation to R. Guillemet for chemical analysis; the Houzeau Prize to M. Badoche for work on rubrene and heats of combustion; and the Girard Foundation to R. Quelet for organic chemistry.

Early in 1939 the Vienna Academy of Sciences awarded the Rudolf Wegscheider prize to R. Kuhn for his work on lactoflavine; and the Fritz Pregl prize to F. Hecht for micro-analysis of monazite thorium and uranium minerals.

HUBERT N. ALYEA.

CHEMISTRY, INDUSTRIAL. Self-sufficiency continued to be the industrial keynote in 1939, as rumors of war followed by war itself intensified greatly the efforts of nations to liberate themselves from dependence on foreign raw materials. Governments liberally subsidized native industries. Germany entered the European War with a host of synthetic materials at her command: gasoline, rubber, fats, textiles, plastics, and even foodstuffs all synthesized from coal, air, water, and wood.

The Chinese have accomplished the miracle of transporting in one year 120,000 tons of modern chemical equipment a thousand miles inland to Chungking, where 100 factories turn out paper pulp, cement, steels, copper, tin, mercury, gasoline, and alcohols. Japan has appointed the Pekin Syndicate, Ltd. as sole agent for Chinese tungsten ores, formerly a monopoly of the Chinese Government. About 91 per cent of China's tungsten was exported from Hong Kong in 1938, as compared with 16 per cent in 1935. Favorable weather conditions in North China led to a 800,000 metric ton output of salt as compared with 200,000 tons in 1938.

Egypt is planning the manufacture of pharmaceuticals on a large scale.

The German fuel problem continued. In a carefully reasoned article in *Industrial Chemistry* for November, 1939, A. J. Underwood concluded that Germany will not run short of oil during the present war. Her wartime needs will be helped by lack of civilian and maritime peacetime demands. Whether she can produce aviation fuel is another question. Sections other than North Germany were required to abandon alcohol and to substitute, for the first time, tetraethyl lead. Fischer-Tropsch Kogasin II, mixed with oil from coal, has been used as excellent Diesel fuel. German aviation lubricants are better than castor oil, and are not sticky. They are made by passing an electric discharge through mineral and vegetable oils, a process developed by the Belgian Elektrion Co., and used by the Royal Dutch Shell for its airliner lubricants. H. Pichler described a synthesis at a pressure intermediate between that of the

methanol and the benzene syntheses which gives a crude paraffin suitable for soap and possibly fat. 40,000 tons, one-tenth present consumption, are to be produced.

A 94 per cent conversion of benzaldehyde into toluene was reported by Krebs and Borchert, the benzaldehyde being produced from CO and benzene.

Production of synthetic textiles is increasing. "Pe-Ce," a thermoplastic polyvinyl chloride, for fishing nets, appeared. The first rayon factory constructed under the Four Year Plan began operations at Krefeld. A staple fiber plant to treat 12,000 tons of jute fiber and 36,000 tons of straw cellulose has been erected at Wittenberg. Zelljute, a substitute for jute, will be produced by 1940.

Full-scale production of Buna was realized at Schkopau. Buna S milk, an artificial latex has been made as an emulsion of butadiene and styrol.

The huge blast furnaces of the Hermann-Göring Werke began operations in the fall. The rolling mill has the largest hall in the world, 250 meters wide and 940 meters long.

Airships have been abandoned for lack of helium.

New projects in **Great Britain** included recovery of 220,000 tons of sulphur from gas works; production of casein fiber under Italian patents; distribution of 1,855,000 tons of lime and 400,000 tons of basic slag to farmers according to the Land Fertility Scheme; consideration of a £6,000,000 plant in Lancashire for aviation fuel from coal; completion in 1940 of a pit-head gas-producing plant in Yorkshire, and exploitation of DuPont Nylon by I.C.I.

Since the first month of the war the Government has taken control of all essential raw materials. Six thousand barrels of aviation fuel per day was ordered from the Anglo Persian fields.

India has awakened to national planning. New plants recently opened include thoroughly up-to-date English synthetic ammonia and sulphuric acid plants in Mysore, a \$17,000,000 aluminum works, soda ash in Dharangadhra and Bahjoi, automatic portland cement works with a capacity of 100,000 tons annually at Bhupendra, starch and dextrin at Ahmedabad to meet the annual demand of 14,000 tons, a jute laboratory opened in Calcutta in January simultaneously with a Japanese announcement of a jute substitute, hydrogenation of vegetable oils, and an iron and steel factory at Cawnpore.

Prospective industries include a \$16,000,000 chemical company in Bombay to manufacture heavy chemicals, fertilizers, and special chemicals; and 1500 producer-gas plants within the next two years by the Koela Producer-Gas Plant Co., the largest single contract of its kind ever to be awarded. Processes arousing Government interest include synthetic nitrogen for a rapidly expanding fertilizer industry, Sen molasses-coal-tar roads in place of macadam, synthetic resin from refuse lac, paper from indigenous woods and grasses, improved cotton, carbonization of low-grade oil and coal, substitution of wood and charcoal as a motor fuel; electric furnace steel, electric furnace chemicals, and aluminum to exploit the abundant hydroelectric energy; non-hygroscopic solid molasses for fertilizers, organic acids, and plastics.

The possibility of **Italy** remaining neutral has intensified chemical research on native materials. The Council for Research has subsidized utilization of lignites, electro-chemical recovery and extraction of tin, copper, and nickel, and a huge

company to develop the gases from the fumaroles and soffione in the vicinity of Pisa.

Twenty-five per cent of Italy's needs for gasoline will be met by its large works at Bari and Leghorn, each having a capacity of 100,000 tons of aviation benzine, 140,000 tons automobile benzine, as well as lubricants and paraffin. Two factories near Leghorn, to be completed late in 1940, will produce 60,000 tons of lubricating oil and 20,000 tons of paraffin. Imported Mexican crude oil is not as good as Albanian and presents problems in treating for aviation fuel. Nearly half of Italy's benzine is by hydrogenation, the other half by high temperature carbonization, and only about 2 per cent by low-temperature carbonization. In 1938, 7,000,000 gallons of aviation fuel was produced. The first Houdry catalytic plant was put into operation by the Italian Socony-Vacuum Company. A new Italian refinery is producing 28,000 tons of paraffin for candles.

By the spring of 1939 natural methane was used in automobiles in the lower Padua valley, in Southern Italy, and near Florence. Power alcohol came from several sources because of the shortage of sugar beets: 30,000 hectoliters from sorghum in Rome; 70,000 hectoliters from 30,000 tons of wood residue near Bolzano by the German Schiller process; and a third process by Giordana and Leone, utilizing any cellulose material now ready to move from the semi-plant stage to a large plant near Bolzano.

The cellulose industry continues to expand. The enormous works of the Snia Viscosa making cellulose pulp for textile fibers from marsh cane near Venice opened in September, 1938. Its largest building has a frontage of more than 1000 meters. The Pomilio Cellulose Process has expanded throughout the world, utilizing corn, rice, oats, straw, esparto, Italian cane, Cusco fir-tree cellulose, and many other raw materials. In November a plant at Varedo began to produce 10,000 kilograms of rayon daily, and soon expects 50,000 kilograms of short fibers daily. The quality of lanital has improved and now constitutes 30 per cent of the army clothes. "Railan," a new rayon thread made its appearance.

Italian synthetic rubber from the polymerization of butadiene derived from calcium carbide is similar to Buna. A new plant for calcium carbide and cyanamide was created at Carrara. Rubber plants are also being grown.

Italy is now independent of Chilean nitrate for industrial and military explosives, and for fertilizers. Three-quarters of the Italian caustic alkali demand for textiles as well as outlets for chlorine are met by the Electrolytic plant at Rosignano.

In Japan the promotion of chemical industry which reached a high level in 1938 slipped more than 75 per cent during 1939. However, industrial leaders predict that Japan will inevitably make another giant stride toward world chemical power as the European War drags on, just as during the World War she laid the foundation for a chemical industry which has since become the world's fourth largest.

On April 1 a three year plan was endorsed to increase synthetic gasoline 2900 per cent and synthetic heavy oil 800 per cent. Two 30,000-ton Fischer-Tropsch plants were completed in Manchuria, and a 140,000-ton plant will be built in 1940. Japan could not pay the 15 million dollars asked for the patent rights to the Standard Oil-I.G. hydrogenation process. Eight leading Japanese oil concerns are to produce aviation fuel.

Experts are testing pulverized coal suspended in oil and injected into a Diesel type engine. Aviation lubricant of reputed quality is being manufactured from fish oil. Synthetic methanol production has started with capacity at 23,500 metric tons, and will be increased to 950,000 gallons within three years.

The Fertilizer Control Bill drove chemical companies to other fields; and as a result there will be only 1,370,000 metric tons of ammonium sulphate available against a demand for 1,760,000 tons for 1939. Also calcium cyanamide and superphosphate imports from Germany and France have ceased because of the war. Plants are turning from ammonium sulphate to urea and methanol, and electrical power has turned to munitions.

The textile industry is suffering from lack of German dyes since the dye import was curtailed from 17,000,000 to less than 3,000,000 yen in 1938. Production will start on German chemicals previously imported. New plants include two French-Japanese Claude liquid-air plants at Hirohata and Kobe; butanol and ethylene glycol from wild potatoes; 10,000 pounds monthly of mucilage from seaweed; 120,000 metric tons of Mongolian cement annually; a large increase in exports of matches to China and Iran; 40 tons of phenol per month; self-sufficiency in carbon black by February, 1940; a 25,000 ton electrolytic soda and chlorine plant; and an explosives industry which is now booming.

The German Krupp-Renn process for iron concentration cost Japan 10,000,000 yen, about three times the entire cost of the original research development. Japan is to exploit the immense coal and iron deposit near Korea. Development by the end of 1941 calls for treatment of 1,300,000 metric tons of coal, 1,300,000 metric tons of iron ore and an iron and steel works with a capacity of 500,000 tons of pig iron and 100,000 tons of steel. The light metal research laboratories have raised a cry for self-sufficiency, and the aluminum and magnesium industries are growing. Refining of nickel from local ore deposits will turn out 10,000 metric tons of nickel-chromium steel, 5000 tons of stainless steel, and 1000 tons of nickel by the end of August, 1939. New Caledonian ore, newly acquired by Japanese interests, is expected to produce 5000 tons of pure nickel annually.

Japan is planning a synthetic rubber program, although negotiations for DuPont neoprene patents failed.

Efforts to render Japan's rayon and staple fiber industry independent of foreign supplies has failed, for although the demand for the staple fiber, rayon, and cellophane industries reaches 365,000 tons, only 58,000 tons were licensed for importation by the Government. The Ohara plant is to produce 20,000 tons of pulp annually for paper and rayon from Japanese sugar bagasse. Twenty-one companies are attempting to produce paper and pulp from a variety of local materials, but with little success so far. Japan is substituting soybean casein for milk casein in synthetic fibers, and artificial wool from whale meat; the latter mixed with cellulose xanthate gives a silk-like fiber. The fiber industry is attempting self-sufficiency in carbon disulphide of which 13,600 metric tons are required annually.

The camphor monopoly has been broken by DuPont, which began in 1932 to manufacture it synthetically from turpentine for celluloid, drugs, and explosives.

In Manchoukuo the five-year industrial plan

now in its third year concerns rubber, magnesium, aluminum, leather, and cement.

The exportation of citrus fruits from **Palestine** to many new European ports has been made possible by the discovery of A. Farkas in Jerusalem that wrapping fruits in diphenyl-impregnated paper extends their life ten-fold.

Russia expects to achieve self-sufficiency in rubber by 1942; synthetic rubber already meets two-thirds of their needs. In the recent partitioning of Poland, Russia gained 75 per cent of the oil fields, and 50 per cent of Poland's refineries; but Germany gained the newly-created industrial plants in the so-called safety triangle around Sandomierz. Russian magnetic ore at Kursk, containing 67 per cent iron, and about half the total world iron resources, will yield about 300,000 tons a year beginning in 1940. A plant near completion in Leningrad will convert 300,000 tons of dry peat into gasoline and other derivatives.

In the **Scandinavian** countries a number of new plants were opened. **Finland** commenced production of 400 kilograms of rayon a day and an equal quantity of cellophane, one-half the consumption of the country. **Sweden** is considering the Peco treatment of peat to give a tar suitable for high-pressure hydrogenation to gasoline. At present gasoline is blended with 25 per cent ethanol, a waste product which at present amounts to 30,000 metric tons annually from sulphate pulp. 40,000 metric tons of calcium cyanamide will be produced annually near Stockholm. The Consumers' Co-operative Union at Sweden is manufacturing electric light bulbs, rubber, flour, vegetable oils, viscose and acetate rayon, superphosphate fertilizer, linoleum, and heavy chemicals. In all of these, research plays an important part; for example, 80 per cent of the rayon profits are turned back into developing the cellulose from the Swedish forests. **Norway**, in increasing self-defense is considering a 110,000 ton rolled steel mill, using pig iron from the electric furnaces in the vicinity of Mo in north Norway.

In **Transvaal, South Africa**, the first paper pulp plant was opened at the end of 1938. Using the Pomilio process, resinous and non-resinous woods will produce various pulps, chlorine and derivatives, and caustic soda. The sisal industry is well established in Kenya now, but the flax industry has been less successful.

In **South America, Argentina** is considering dean ranges. A sum of \$2,000,000 was allowed for the topping, cracking, and polymerization plant at the La Plata refinery. Tungsten production was greater than for any year since 1917. **Bolivia** possesses 250,000 tons of tin reserve, its most important export, and in 1939 will export its quota, 1750 metric tons. In January **Brazil** launched a five-year program for developing public works and national defense. Discovery of petroleum in Bahia aroused great interest, for although Brazil has enormous water power, it needs petroleum. Substitutes for gasoline being considered include shale oil, wood and charcoal which are plentiful, and alcohol, addition of which to gasoline is obligatory. Native castor oil is substituted for imported lubricating oil. Efforts are being made to develop a coal industry, fixation of atmospheric nitrogen, purchase of the entire output of superphosphate from Ipanema apatite, and intense interest in plastics from coffee. For the first time pig iron was exported. In **Chile** the first shipment of manganese went out in May, 1938. It also produces gold, platinum, iridium, cuprous pyrite,

graphite, as well as copper, silver, and saltpeter.

United States. The Southland Paper Mills, Inc. near Lufkin, Tex., on May 27, 1939, opened a \$6,000,000 newsprint plant, the first to use common Southern yellow pine. Capacity will be 50,000 tons a year. Operations will be keenly watched by paper manufacturers. Ethyl Gasoline Corporation plans a \$4,000,000 expansion at Baton Rouge, La. The Texas Corporation and other oil companies are installing petroleum catalytic cracking units costing many millions of dollars. The Union Carbon and Carbide Corporation are to acquire the Bakelite Corporation, manufacturers of cellulose acetate, urea-formaldehyde, and polystyrene plastics, thus bringing the manufacture of raw materials closer to the consumer. The \$8,500,000 Nylon plant at Seaford, Del., will be completed early in 1940. A second unit is already being built. Also DuPont is spending \$2,500,000 on plant extensions at Belle, W. Va., for making Nylon intermediates. A 25,000,000 lb. plant of the American Viscose Corporation opened at Front Royal, Va. The International Agricultural Corporation is to spend \$2,500,000 on potash minerals near Carlsbad, N. M. Matheson Alkali salt cake by their new process will soon be available. The cornerstones of the regional research laboratories of the Bureau of Agricultural Chemistry and Engineering, Department of Agriculture, were laid in 1939.

Miscellaneous. The I.G. at Oppau, Germany, perfected a series of thermotropic plants from 30° to 440° C for indicating temperatures on aeroplane parts. Dow patented a process for liberation of iodine from brine, adsorption on active carbon, and subsequent precipitation of the iodine from the anode of an electrolytic cell. Lignin was found an effective adsorbent for iron in water. A simple method was reported for manufacturing thiodiglycol, starting point for mustard gas.

Thaysen in England reported a bacteria which fermented kerosene to 10 per cent ethane and 90 per cent methane. Tobacco free from nicotine was grown near Naples. Dunstan and Duncan discovered that certain thiocyanates increased the red pigment, idaein, in apples. Hofius kept milk palatable at low temperatures in an atmosphere of oxygen. Simons urged the use of HF in industrial organic catalysis. Sherwin-Williams substituted Dehydrol, 9-11-octadecadienic acid, a dehydroxylated castor oil, for tung-oil in paints.

The Mellon Institute reported improved raw material for ceramics, a superior dry cleaner, cheap X-ray paper, synthetic lubricants for watches, a plasticized sulphur binder for bricks, skylights, and roads, use of the X-ray to detect the large core which forms in Japanese cultured pearls, and tenderizing meat by heating and simultaneously exposing to ultra-violet light to kill bacteria.

By forming tough films of 0.02 per cent starch acetate in water around coal, DuPont was able to extend its sink-and-float process to separating coal from slate. Parting liquids such as pentachloroethane or tetrabromoethane are used.

See also ENTOMOLOGY; ECONOMIC; FERTILIZERS; GLASS; METALLURGY; SOILS.

Nitroparaffins. Commercial Solvents Corporation and Hercules Powder Co. are building a plant at Peoria, Ill., to develop the vapor phase nitration of the paraffin hydrocarbons by oxides of nitrogen, patented several years ago by Hass of Purdue. Natural gas converted to nitroparaffins is condensed with formaldehyde to give explosives

such as nibglycerol trinitrate and nibglycol dinitrate at a price which will keep glycerin as an explosive raw material to 15 cents a lb. During the World War it rose to a dollar a lb. Nitroparaffins are active solvents for cellulose nitrate, resins, fats, and dyes. Mixed with alcohols they are solvents for commercial cellulose acetates. Nitroethane is a heat sensitizer which gels latex; while chlorinated nitroparaffins are antigelling agents, useful in rubber cements. Several hundred derivatives have been prepared from the nitroparaffins, and the process holds considerable promise.

Petroleum. The 125,000,000-gallon aviation market will shortly be supplied with 100-octane gas which a decade ago cost \$30 a gallon. Production has been 7, 20, and an estimated 33 million gallons for 1937, 1938, and 1939 respectively. Chief processes are alkylation of isobutane, or dehydrogenation followed by polymerization or alkylation of lower hydrocarbons to C_6 - and C_7 - mixtures. In November five large oil companies pooled their researches on catalytic alkylation with sulphuric acid as catalyst. To increase sensitivity to tetraethyl lead, sulphur is cracked out. This year several large Houdry plants produced retail gasoline.

Petroleum Gases. Butanes are being stored in gasoline at below 40°F to increase volatility and reduce knock. Liquid propane, in addition to the 150,000,000 gallons consumed as bottled gas each year by the housewife, is used as a solvent in removing, separately, wax, asphalt, and heavy ends from crude lubricating oils.

The first use for refinery gas was the conversion, 18 years ago, of propylene into isopropyl alcohol, cutting its price to $\frac{1}{20}$ th. Next, in 1922, came the production of ethylene glycol from cracked gasoline; it was used as an anti-freeze, and mixed with nitroglycerine to give a low-freezing explosive. Later the lower olefins were used as the starting materials for alcohols, acetone, thiokol, vinyl and acrylate resins, and amines. The higher olefins have yet to be used. Paraffin hydrocarbons are usually first cracked to the olefins. Butylene is converted to butadiene and polymerizing to Buna rubber. Chlorination of the paraffin hydrocarbons is useful, but direct oxidation is of doubtful commercial value because of the complexity of the reactions.

By far the greater portion of the refinery gases, however, are catalytically alkylated and polymerized, or thermally cracked and subsequently alkylated and polymerized. Approximately 300,000 gallons of aviation fuel per day are produced by this method.

Plastics. The history of plastics begins with cellulose plastics, when celluloid was manufactured by Hyatt in 1868 in Newark, N. J., from camphor, alcohol, and cellulose nitrate. The latter is sold today as pyroxylin. Much later, Tennessee Eastman perfected camera safety film or cellulose acetate. Today these products are sold by the Bakelite Co. as Bakelite Cellulose Acetate; by the Celluloid Co., as Lumarith; by DuPont as Plastacele; by Monsanto as Monsanto CA, and by Tennessee Eastman as Tenite I. Admixtures of plasticizers form solid solutions which may be tough, or strong, or good insulators, or easily milled, or readily colored. They are unaffected by alcohol, cleaning fluids, oils, or sunlight. Their resilience and attractive colors make them suitable for automobile steering wheels and dashboard panels; for cosmetic containers, elec-

trical appliances, hardware, radio parts, and cabinets, and personal articles such as costume jewelry, brush handles, fountain pens, and combs. Production for the first seven months was 5,230,499 lb. of nitrocellulose sheets and 5,517,159 lb. of cellulose acetate molding compositions as against 3,114,890 and 3,154,066 lb. respectively for 1938. Cellulose acetate sheets, rods, and tubes more than doubled. Hercules Powder Co. improved the molding properties of moisture-resistant cellulose aceto-butyrate, Tenite II, used for automobile steering wheels. Tenite I proved stronger and more durable than black walnut gunstocks, a fact of military significance in view of the scarcity of seasoned black walnut in 1917-18. Ethyl cellulose by Dow is a similar product that is useful as a coating.

Condensation products constitute another major division of the plastics field. In 1909 Baekeland in Yonkers, N. Y. produced the first plastic of this type by condensing phenol with formaldehyde. Today two sorts of phenol-formaldehyde products are marketed. First, Bakelite, and Durez are molding powders to mix with wood, flour, mica, or asbestos; and this upon baking will harden permanently in a mold. The same powder without filler poured into a mold and cured, often under pressure and heat, solidifies in a few days into the second type of product, slabs, rods, tubes, and the like. In this form they may be drilled, stamped, and turned. Catalin is the chief producer. Lately the Shaw Insulator Co. and others have developed a special method called "transfer molding." The phenolic resins withstand temperatures at which rubber celluloid and natural resins soften, liquefy, or decompose. They are used successfully in telephone equipment and electrical insulation, for silent transmission gears, and for handling corrosive acids. Monsanto is producing sixty-inch neon signs of cast phenolic resin to inlay highways as Illuminated Guide Lines.

The resins are modified by heating with glycerin, with common resin, or with sulphuryl chloride. The condensation of formaldehyde with urea, thiourea, or other substances containing amino groups produces similar resins such as Plaskon, Beetleware, and the German Polloplas. Alkyd resins such as the glyptals, are formed from the condensation of glycerin and phthalic anhydride. News of condensation resins for 1939 includes the use of glyptals for the first time as an exterior coating on the copper walls of the General Electric building at the New York World's Fair; a Bakelite-impregnated fibrous board reported suitable for large-size molding as in refrigerators, and automobile doors; a process for molding color inlay, a new German glass-clear urea-formaldehyde solid, HFK, for imbedding plant and animal tissue; Marlette Quick-Set Resin No. 2 which hardens in 24 hours; and a water-resistant adhesive containing urea, formaldehyde, starch, and 15 per cent ammonium chloride by Rangel in Brazil. Investigation of molded and laminated parts has been extensive. In Germany, for example, a phenolic plastic automobile body has been pronounced partially successful. Recently the Clark Aircraft Corporation aroused considerable interest by molding a fuselage from Duramold hardwood veneer bonded with phenolic resinoid. The Timm Aircraft Corp. will build a Howard Hughes pursuit racer from sprucewood impregnated with phenolic resin. The Aircraft Research Corp. developed methods for mass production of

resin-impregnated parts. The urea product "Kaurit" is used in aircraft manufacture in Germany.

The third, and extremely active, division of plastics has been in the field of *polymerization*. These plastics are sold in the monomeric form for warm-setting, or more frequently already polymerized as molding powders. Research has concentrated on copolymers rather than simple polymers. The polymerization of styrene, $C_6H_5CH:CH_2$, has been known for a hundred years, but polystyrene by Dow, as Styron, has been on the market only two years. Five per cent divinyl benzene may be added to overcome brittleness. A second type of polymer is formed from the acrylates, such as ethyl methacrylate $CH_2:C(CH_3) \cdot COOC_2H_5$. Known for nearly a hundred years, they were manufactured by Röhm of Darmstadt, Germany, who obtained a patent in 1912 on the use of the acrylates as a rubber substitute. By 1931 Röhm and Haas Company of Philadelphia were manufacturing both acrylates and methacrylates. They market the methyl methacrylate as Plexiglas and Crystalite; while the DuPont product which appeared about five years ago is called Lucite. Optical glass made of this polymer will not shatter; cubes of it molded with protruding corners make effective Stimson roadway night-reflectors; internal reflection in rods adapts it to piping light to inaccessible places for dental and medical surgery; a car molded from it was displayed at the New York World's Fair, also a dazzling block equivalent in size to a 57,000 carat diamond, and crystal-clear blocks containing butterflies, and other mountings. The production of the acrylates has been through ethylene cyanhydrin $C_2H_5OH(H_3PO_4) \xrightarrow{(NaCN)} C_2H_4(Cl_2 + H_2O) \xrightarrow{(ROH + H_2SO_4)} CH_2OH \cdot CH_2Cl \xrightarrow{(CN)} CH_2OH \cdot CH_2CN \xrightarrow{(ROH + H_2SO_4)} CH_2:CH \cdot COOR$. Analogously the methacrylate esters are manufactured via the acetone cyanhydrin $(CH_3)_2CO \xrightarrow{HCN} (CH_3)_2C(OH) \cdot (CN) \xrightarrow{(ROH + H_2SO_4)} CH_2:C(CH_3) \cdot COOR$.

This year Smith and Claborn of the U.S. Department of Agriculture developed a method which may compete with the cyanhydrin process using as raw material fermented lactose from milk whey. There are 2,700,000,000 lb. of lactose available in the U.S. annually. This method may be of some significance to Italy where casein milk is being converted into lanital and the whey fed to swine; the lanital coated with the polyacrylate would be resistant to poison gas. Still a third class of polymerization products are the vinyl compounds, starting for example with vinyl chloride, $CH_2:CHCl$. Since polyvinyl butyral does not become brittle when cold, it is replacing cellulose acetate for safety glass and a sheet 0.02 inches thick sandwiched between plate glass does not require sealing at the edges. DuPont has developed Butacite for safety glass. Alvar, Butvar, Formvar, and Gelvar are by the Shawinigan Products Corp. Monsanto has developed polyvinyl acetal resins for automobile safety glass, and polystyrene molding materials for household use. Carbide and Carbon Chemicals Corp. are producing Vinylite, copolymers of vinyl chloride and vinyl acetate, as transparent or colored sheets for men's belts, wrist watch straps and garters. It will elongate 250 per cent, with a ten-

sile strength of 300 pounds to the square inch. (See section on *Textiles* below.) Numerous Dow patents covered vinylidene chloride plastics. A fourth class of polymerization products are the polymerized hydrocarbons similar to Cumar, para-coumarone-indene resin.

Continued search for new raw materials has developed plastics from lignin, corn, soybean, manitol, and sorbitol, and coffee bean. Pliofilm is a rubber plastic which does not need vulcanizing. Knight at the Bureau of Chemistry and Soils described a molding plastic from soybean protein which did not have to be given the prolonged hardening process necessary with casein plastics. H. Polin of New York prepared a plastic from the coffee bean which is either thermo-setting or thermoplastic, in a variety of colors, degrees of hardness and resiliency. It can be drilled, molded, and so forth. Marasco and Merritt developed a special plastic containing lead powder as a shield against X-rays. "Resistoflex PVA," a polyvinyl alcohol substitute for rubber; polymerized cyclopentadiene and sulfonamide resins, flexible shellac; "Flexilac" and flexible casein "Protoflex" are now available.

Progress continued on the first inorganic plastic, the films of bentonite clays invented by Hauser at Massachusetts Institute of Technology. Bentonite clays are used to seal leaks in earth dams, since they swell to many times their dry size. But Hauser has prepared films which do not swell; they are thin, almost transparent; and are offered as Alsifilm, a strong, flexible, waterproof, crease proof substitute for imported mica in electric commutators.

Rubber. The 100th anniversary of the discovery of vulcanization by Charles Goodyear was celebrated on February 23 at Akron, Ohio. Four million people are employed in the production and distribution of rubber goods which in 1937 retailed for over two billion dollars. Monsanto showed that Santobrite, sodium pentachlorophenate, plus a small amount of ammonia will preserve latex at plantations for storage. Dewey and Almy marketed Cryo-vac, transparent-thin latex bags in which vegetables or as much as a 350 pound side of beef may be tightly encased in a carbon dioxide atmosphere to prevent evaporation, rancidity and freezer burns. U.S. Rubber produced a thin rubber membrane containing 6400 holes to the inch square inch for filtering membranes, and porous bathing suits and girdles. Goodrich made an automobile spring containing three pounds of rubber and seven pounds of metal; the rubber is under compression and torsion pressure instead of the usual strain and tension. They also perfected Koroseal linings, which do not require vulcanization, for industrial acid tanks. Neoprene production from 2 chlor-1, 3 butadiene now equals 1 per cent of the total natural rubber production in the U.S. A Neoprene-coated conveyor belt for oily coal is in use. Glenn Martin Co. announced a vibration-proof airplane Mareng fuel tank made of Neoprene-coated fabric. The University of Alabama developed a sulfur material, similar to Thiokol. It loses its rubber-like properties in solution, and regains them upon coagulation with acid, suggesting an easy way to impregnate cloth. In Java a road base, Mealorub, containing 96 per cent rubber has been compounded.

Textiles. Raw materials for textiles include casein, whey, woods, and grasses, soybean impregnations of rubber and plastics, glass fiber,

metal fiber, and threads of plastics or protein from coal, air and water.

The increase of world rayon production from nothing to nearly two billion pounds a year has taken place within a generation. Rayon heretofore manufactured as a continuous fiber has only recently been produced with the kink and resilience of animal fibers.

Lanital from skim milk was patented by Ferretti on Aug. 28, 1935, in Italy and is now produced all over the world. It is estimated that approximately 7,000,000 pounds of casein fiber was produced in 1938. Casein fiber is entirely casein, one pound of casein producing one pound of fiber. It may be cut to any length, has a fine kink, is smooth (not scaly like wool) and does not shrink or crease much. Its disadvantages, like those of the early rayons, are a comparatively poor tensile strength when wet. The potential supply of skim milk is forty billion pounds, yielding one billion pounds of casein fiber, which is equal to half the world rayon consumption. Its cost in Italy is 40 per cent that of wool. Britain and Japan have acquired rights for modifications of the Ferretti process. A Dutch firm, AKU, is producing Lactofil, a different casein fiber made without first removing the casein from the skim milk. Soybean protein may be utilized in place of casein.

Synthetic coatings for fabrics are attracting considerable attention: urea-formaldehyde resins to prevent shrinking; glyceryl-phthalate resins to waterproof; beetled finish to give a soft linen finish; and vinyl resins for a variety of finishes.

In 1938 Carbide and Carbon Chemicals Corporation in competition with DuPont Nylon, produced Vinyon, a polyvinyl acetal resin as fine as natural silk, waterproof, fireproof, and more elastic, unaffected by mineral acids and alkalis, not attacked by bacteria and fungi, non-shrinkable up to 65°C, and with good knitting properties. A gossamer-like stocking of Vinyon was displayed at the Chemical Exposition in New York in December 1939. Production of Vinyon will be handled by the American Viscose Corp. from Carbide and Carbon Chemicals Corporation intermediates. The Shawinigan Chemicals Ltd. of Montreal have similar patents, and the I. G. in Germany makes a thermoplastic fish-net, "Pe-Ce," of polyvinyl chloride. Koroseal, developed after five years of research in the Goodrich laboratories, utilizes plasticized polyvinyl chloride, and ranges from soft grade Korogel to hard Korolac.

Nylon (See NEW INTERNATIONAL YEAR BOOK 1938, page 143) yarn hosiery was placed on sale at Wilmington, Del., on Oct. 24, 1939, with an estimated production of 5,000,000 pairs in 1940 at \$1.15 a pair. In addition to brush bristles, stockings, and fish lines, Nylon (Zytor) is superior to silk for sutures since it is non-capillary and is thus less likely to carry infection, and it is tough for parachute and ammunition bags. Japan is naturally concerned over the advent of Nylon, and the Government has contributed \$1,180,000 yearly to textile research to meet the challenge.

Textile news includes an ethyl cellulose fiber, Ethoraon, by Dow; Duraklad, acid-proof fabric by Stanley; Permalon fiber by Pierce Plastics; a patent to Standard Oil Co. for elastic fibers from polyisobutylene; soybean fiber by Glidden Co. and by Ford. Coatings included Rhoplex W-66 by Röhm and Haas as a water-dispersed, colorless synthetic resin; DuPont Avitex, a finish-

ing agent for spun rayon; Mazein and Mazite, prolamine zein for paper; General Electric Formex wire, coated with polyvinyl formal resin; alkylated amine-aldehyde resin and the intermediate material dicyanodiamide for melamine coatings by American Cyanamid; Textac, for cotton, by Hercules Powder Co.; Pervel, a treated paper which feels and looks like cloth, for aprons, pillow cases and curtains; and a fish-skin fiber having a solidity 25 per cent higher than natural silk.

A. J. Hall described a process for treating wool with sulfuryl chloride to render it completely unshrinkable. Monsanto announced the substitution of dipotassium phosphate and sodium potassium ethyl phosphate for olive oil in wool processing; this eliminates the necessity of washing out the oil with soap and leaves the cloth fluffy. Smith and van der Heide of Amsterdam investigated bacteria which destroy all the lanital in a textile containing 50 per cent wool, 50 per cent lanital. Boiling the fabric destroyed the bacteria and the digestive enzyme which it produces.

Awards and Medals. The Edward Goodrich Acheson Medal was presented to F. C. Frary for achievements in the metallurgy of aluminum; the Bessemer Gold Medal of the Iron and Steel Institute to James Henderson; the 1939 Borden \$1000 Award to L. S. Palmer for his chemistry of milk; the John J. Carty Medal and \$3000 to Sir William Bragg of the Royal Institution in London for his crystal structure studies; the C. F. Chandler Medal of Columbia University to T. H. Chilton of DuPont for his unit engineering processes; the Chemical Engineering Achievement Award of Chemical and Metallurgical Engineering to the Standard Oil Development Co. for large-scale production of new aviation fuels; Chevreul Medals in Paris to Ipatieff and Armstrong for catalysis and hydrogenation; the Herty Medal to F. K. Cameron of N. Carolina for research on cellulose in cotton; the Lamme Medal to T. A. Boyd for his fuel researches; the 1940 Perkin Medal of the Society of Chemical Industry to Charles M. A. Stine of DuPont; the Schoelkopf Medal to Charles F. Vaughn for alkali and chlorine work; the Edmund Thiele Commemorative Medal to Fritz Gajewski for manufacturing pulp from sulphite from German beechwood; and the first Vermilye Medal by the Franklin Institute to L. H. Brown, President of the Johns-Manville Corp.

Bibliography. See *Science News Letter*, Volume 35, page 247, 1939, and Volume 36, page 263, 1939, for résumés of important publications during the year.

HUBERT N. ALYEA.

CHEN LU. A Chinese diplomatist, assassinated in Shanghai, Feb. 19 or 20, 1939. Born in Fukien, China, Mar. 22, 1876, he was educated at the Foochow Arsenal School and Paris University (1906). Entering the diplomatic service, he was attaché to the Ching Imperial Commission to study the constitutional systems of various countries in Europe and America in 1906, and in the following year he was made secretary of the Chinese Government Delegation to The Hague Conference. He became a counselor in the Foreign Office in 1909, chief secretary to the Board of Foreign Affairs in 1909, and director of Political Affairs during 1910-11.

Appointed minister to Mexico in 1914, he was named Chinese Plenipotentiary at the Sino-

Russian-Mongolian Conference at Kiakta in 1914, resident-general at Urga, Outer Mongolia (1915-17), vice minister of foreign affairs (1918-20), and minister to France (1920-27). Chinese delegate to the League of Nations in 1923, he became adviser to the minister of foreign affairs in 1934 and served until 1938, when he became minister of foreign affairs in the Nanking Government. His prominent position in the puppet government set up at Nanking by the Japanese was believed to have led to his assassination.

CHESS. See **SPORTS**.

CHICAGO. See **ILLINOIS**; **AERONAUTICS**; **ART MUSEUMS**; **FIRE PROTECTION**; **MUNICIPAL OWNERSHIP**; **RAPID TRANSIT**; **SEWERAGE AND SEWAGE PURIFICATION**; **TELEPHONY**; **WATERWORKS AND WATER PURIFICATION**.

CHICAGO, UNIVERSITY OF. An institution of higher education and research in Chicago, Ill., founded in 1890. Privately endowed, the university is coeducational and nonsectarian, although not less than three-fifths of its trustees must be members of Christian churches, and a majority of the three-fifths must be Baptists.

The University is organized on the Chicago plan, which enables students in both the college and the divisions to progress as rapidly as they wish, taking examinations when they feel they have mastered the subject at hand. The general organization of the University is as follows: the college, comprising the first two years of work, in which the student takes general survey courses in the humanities and the physical, biological and social sciences; the divisions, comprising the last two years of undergraduate and the subsequent years of graduate work, during which time the student specializes in his field of major interest and also takes courses in related fields; and the professional schools, viz.: law, medicine, divinity, education, library, social service administration, and business.

In 1937 the University also set up the four-year junior college, designed for students who have had six years of grammar school and four years of high school. The junior college incorporates the last two years of the present high-school with the first two years of present-day college work, and is designed to give students the best general education the University can provide. At the same time it is recognized that each student will have some special interest, and each student's program is accordingly planned so that he will have time to develop this special interest or acquire a mastery of subjects and techniques needed for advanced university or professional work.

During the summer quarter of 1939, 4098 students were enrolled in the University; 2063 men and 2035 women. In the autumn quarter of 1939 there were 7542 students enrolled; 4438 were men and 3104 women. Of this total, 3806 men and 2205 women were in the divisions and professional schools, and 632 men and 899 women were in the University College (downtown division offering evening and Saturday courses). Of this same total, 7542, there were 1985 men and 1339 women graduate students, 2118 men and 1302 women undergraduates, 335 men and 463 women students-at-large. The total enrollment for the academic year 1938-39 was 12,520, which was an increase of 800 over the previous year. The Home Study (correspondence department) had an average enrollment of 3684, which is exclusive of the totals given above. The University granted 1768 degrees during the academic year; 497 were Master's de-

grees and 178 were Doctorates of Philosophy.

The total funds held by the University as of June 30, 1939, amounted to \$125,835,441, a decrease of \$410,923 over the same figure for the same date in 1938. These funds were divided as follows: Endowment, \$70,944,248; plant, \$44,436,453; other funds, \$10,454,740. The total income of the several divisions of the budget was \$8,375,444, an increase over income of the previous fiscal year of \$160,428. This total of budget income does not include income of auxiliary enterprises such as residence halls, commons, bookstore, and student social facilities, nor restricted expendable gifts. Including such income, the total current income for 1938-39 was \$10,567,953. The total amount of gifts paid in was \$1,308,672.

Among the outstanding events of the academic year 1938-39, and the calendar 1939, was the setting up of the Alumni Foundation, looking to celebration of the University's fiftieth anniversary in 1941.

The department of education instituted the workshop method during the 1939 summer quarter, for secondary teachers and the first college workshop in the country. This program, developed by Dr. Ralph W. Tyler, chairman of the department of education, enables teachers to map courses and devise tests for measuring their educational effectiveness in co-operation with curriculum and examination experts and in conjunction with fellow teachers.

Arthur Holly Compton, Nobel prize winner and foremost experimentalist in the field of radiant energy, and the University's department of physics were host to a symposium on cosmic rays at the University, which brought together leading investigators in the field from all parts of the world, including four Nobel prize-winners.

The Cowles Commission for Research in Economics, a leader in the movement to integrate economic theory with mathematics and statistics, moved its headquarters to the University, with Theodore O. Yntema, professor of statistics, appointed director of research.

Taking advantage of the presence of the statisticians of the Cowles Commission and other statistical experts on the faculty and in the city, the University's committee on statistics formed the Institute of Statistics, to provide introductory and advanced statistical training applied to business, industry, and science. The committee appointed Joel Dean, of the University faculty, director of the institute.

The year marked another forward step in the educational radio broadcasting when in conjunction with Columbia Broadcasting System the University began the "Human Adventure," a series of dramatizations of research conducted by University faculty members. (The University Round Table, an N.B.C. network feature, with ten years' steady broadcasting, is the oldest continuous educational program on the air.)

Facsimiles of paintings, drawings, and prints, part of the Max Epstein Art Reference Library, were shown to the public for the first time.

Ralph Buchsbaum, instructor in zoology, Clarence H. Faust, assistant professor of English, and William C. Krumbein, assistant professor of geology, were awarded the annual \$1000 prizes given by an anonymous donor for the three best teachers of undergraduate students.

Fifteen men and women were added to the faculty during the year. These included: Dr. John Knox, author, preacher, and religious scholar, as associate professor of preaching; Dr. Bruno Rossi,

regarded as the leading European student of cosmic rays, as research associate in the department of physics; Dr. George Otis Whitecotton, formerly superintendent of Stanford university hospitals, as superintendent of the University Clinics; and Drs. C. L. Cushman, Herbert Abraham, John L. Bergstresser, and Daniel A. Prescott, as members of the department of education.

The University Press listed 127 publications for the academic year, in addition to sixteen scholarly journals, and the release of two sound motion pictures in biology. *The International Encyclopedia of Unified Science*, Otto Neurath, editor, got under way with publication of parts i-iv of Vol. I, "Foundations of the Unity of Science." *The Dictionary of American English*, edited by Sir William Craigie, James R. Hulbert and a staff of expert research men was increased by parts iv, v, and vi, bringing the work to "dew." Part v completed Vol. I of the work. See PHOTOGRAPHY.

The libraries added approximately 39,000 bound volumes, raising the total to 1,271,296. The outstanding accession of the period was the Salmon O. Levinson Collection of International Peace Papers, numbering about 50,000 pieces, and containing the best existent documentation of the Pact of Paris (1928). President, Robert M. Hutchins, Ph.D.

CHICKENS. See POULTRY.

CHILD LABOR. See CHILDREN'S BUREAU; LABOR CONDITIONS; LABOR LEGISLATION; SUPREME COURT.

CHILD PSYCHOLOGY. See PSYCHOLOGY.

CHILDREN'S BUREAU. The Children's Bureau, U.S. Department of Labor, established in 1912 to carry on research and provide information and advisory service on all phases of child life in the United States, was authorized by the Social Security Act (1935) to administer three programs for grants to States for maternal and child-welfare services and was designated the Federal agency for the administration of the child-labor provisions of the Fair Labor Standards Act of 1938.

Under the Social Security Act Amendments of 1939 the annual authorization for Federal grants to the States for maternal and child-health services was increased from \$3,800,000 to \$5,820,000; for crippled children services, from \$2,850,000 to \$3,870,000; and for child-welfare services, from \$1,500,000 to \$1,510,000. Under each of the three programs, Puerto Rico was made eligible for grants beginning Jan. 1, 1940.

For maternal and child-health services Federal payments totaling \$3,724,362 were made to the public-health agencies of the 48 States, the District of Columbia, Alaska, and Hawaii on the basis of State plans approved by the Children's Bureau during the fiscal year ended June 30, 1939. With the assistance of Federal funds and consultation service from the Children's Bureau, the State health agencies extended maternal and child-health services, especially in rural areas, through the employment of physicians to give health supervisory service to mothers and children at prenatal and child-health conferences and through the provision of public-health nursing service at the clinic, in the home, and at school. The quality of maternal and child-health care was improved through postgraduate courses for physicians and other professional workers and through the employment of specialized consultants on the staffs of State bureaus of maternal and child health to give supervisory service to local public-health personnel and to give consultation

service to practicing physicians and other professional workers. In limited areas maternal and child-health funds were used to provide public-health nurses to give home-delivery nursing care on the request of practicing physicians. The increased funds for grants to the States for this program (\$2,020,000) are to be used for extension of service and for undertaking in selected areas medical care services for mothers and children.

The Children's Bureau continued during 1939 its effort to bring to the attention of the public the opportunity to prevent the unnecessary deaths of mothers and babies. The United States Bureau of the Census reported for the year 1938 the lowest maternal and infant mortality rates on record for the United States: 44 deaths of mothers per 10,000 live births and 51 deaths of infants under one year of age per 1000 live births. The President proclaimed May 1, 1939, Child Health Day. State health agencies took the lead in organizing Child Health Day activities using the slogan announced by the Children's Bureau, "The Health of the Child is the Power of the Nation."

Studies of the causes of stillbirths and of maternal and infant mortality, and of methods to promote the growth, development, and health of children were continued by the Children's Bureau. A study on medical services provided for children in a selected group of communities was begun. A new publication *Well-Nourished Children*, and revised editions of several bulletins and folders on maternal and child care were issued. Approximately 1,700,000 popular publications on child care and training were distributed during the fiscal year ended June 30, 1939.

For crippled children's services, Federal payments totaling \$2,997,914 were made to the State crippled children's agencies under State plans approved by the Children's Bureau during the year ended June 30, 1939. With the approval of the Louisiana plan in March 1939, the crippled children's program became operative in all 48 States, the District of Columbia, Alaska, and Hawaii. The additional amount (\$1,000,000) authorized for Federal grants hereafter for which matching with State funds is not required will enable more funds to be given each year to certain States heretofore unable to match in full the Federal grants. On Sept. 30, 1939, 237,000 crippled children were on the registers of the State crippled children's agencies and the number is steadily increasing.

For child-welfare services, Federal payments to the State public-welfare agencies totaling \$1,520,893 were made on the basis of State plans approved by the Children's Bureau during the fiscal year ended June 30, 1939. With the approval of the Wyoming plan in December 1939, the program for child-welfare services became operative in all 48 States, the District of Columbia, Alaska, and Hawaii. Under the administration of State welfare agencies a total of 585 full-time professional child-welfare workers were employed with Federal, State, and local funds during the fiscal year. Most of the services rendered by child-welfare workers are given to children in their own homes through aiding parents to deal with the physical, mental, social, and economic problems that threaten the well-being of their children.

The Children's Bureau, in relation to studies of social conditions affecting children, worked during 1939 with private and public agencies on

standards of care given children in institutions and agencies, on problems involved in child adoption, and in the protection of unmarried mothers and their children, on the development of housekeeper services, on the changing relationship of juvenile courts to community welfare agencies with growing responsibilities for children, and on the programs of State training schools for maladjusted children. The legislative sessions that occurred in most of the States in 1939 brought many requests to the Children's Bureau for advice on proposed legislation. Several States passed legislation improving their protection of children. Community Service for Children in St. Paul, Minn., a co-operative project undertaken by the Children's Bureau and community agencies to find methods of preventing juvenile delinquency before court procedure is resorted to, reached a stage of full operation during the year.

A report, *The Community Welfare Picture in 29 Urban Areas, 1938*, issued by the Children's Bureau in 1939 indicated that the year 1938 established a high mark in urban welfare expenditures (\$637,000,000 or \$44.01 per capita in the 29 areas covered). The study showed 72 per cent of all expenditures going for family welfare and general dependency (including aid to dependent children), 17 per cent for hospital inpatient service, less than 4 per cent each for care of children, leisure-time activities, and health services other than hospital care, and less than 1 per cent for the work of private planning and fund-raising organizations. Public agencies expended 83 per cent of the funds spent and private agencies 17 per cent.

During 1939, the Children's Bureau in administering the child-labor provisions of the Fair Labor Standards Act of 1938, developed co-operative relationships with State labor departments and other State and local agencies issuing employment certificates for children going to work. The Fair Labor Standards Act in effect establishes a basic minimum age of 16 for employment in industries producing goods for shipment in interstate commerce and of 18 for occupations in such industries found and declared by the Chief of the Children's Bureau to be particularly hazardous or detrimental to their health and well-being. The Children's Bureau by the close of 1939 had designated all but seven States as States in which a State employment certificate in the hands of an employer would be accepted as proof of age under the Federal Act. To make this possible many of the States strengthened the administration of their laws for the issuance of employment certificates and extended the issuance of such certificates to cover boys and girls of 16 and 17 years of age.

The Act provides also that outside the field of manufacturing and mining occupations children 14 and 15 years of age in industries subject to the Act may be employed in occupations under conditions determined by the Chief of the Children's Bureau not to interfere with schooling, health or well-being. A regulation issued by the Chief of the Bureau, after investigation and a public hearing, specifies the conditions under which such minors may be employed, excluding them entirely from manufacturing, mining, and processing occupations, from work on power-driven machinery or hoisting apparatus, from the operation of motor vehicles or as helpers on such vehicles, from public messenger service, and from

occupations found and declared by the Chief of the Children's Bureau to be particularly hazardous for minors between 16 and 18 years of age. In other occupations which may be subject to the Act, employment outside of school hours is permitted at 14 years, subject to specified maximum-hour and night-work regulations.

On May 18, 1939, the Chief of the Children's Bureau after preliminary investigation and public hearing issued the first order as authorized by the Fair Labor Standards Act of 1938 relating to occupations hazardous for the employment of minors between 16 and 18 years of age. The order declared hazardous for the employment of minors between the ages of 16 and 18 years of age all occupations in or about any plant manufacturing explosives or articles containing explosive components. A second order issued Nov. 27, 1939, declared the occupations of motor-vehicle driver and helper to be particularly hazardous for persons of these ages. These orders in effect exclude minors between 16 and 18 years of age from these occupations in or about establishments producing goods for shipment in interstate commerce.

Children's Bureau research in the field of child labor includes the study of conditions under which children are employed in intrastate industries not covered by the Fair Labor Standards Act as well as studies essential for administration of the child-labor provisions of the Act. During 1939 many State agencies called upon the Bureau for information and advice on child-labor legislation and its administration and many States passed legislation raising the standards in their State child-labor laws in one or more particulars.

KATHARINE F. LENROOT.

CHILD WELFARE. On Apr. 26, 1939, the first session of the White House Conference on Children in a Democracy was held in Washington. The Secretary of Labor, chairman of the Conference, at the direction of the President, appointed as members of the Conference approximately 600 men and women representing all States and a wide range of interests, including workers in various fields of child-welfare, members of civic groups and of labor and farm organizations, and officials of public and private child-welfare agencies. At the second session of the Conference, to be held Jan. 18-20, 1940, a series of reports prepared by Conference committees were to be considered, outlining child-welfare advances in the United States during the past 10 years, analyzing present conditions as they affect children, and proposing objectives to be sought in the next 10 years. The President is honorary chairman and Katharine F. Lenroot, Chief of the Children's Bureau, executive secretary. The Conference is the fourth in a series of child-welfare conferences called under Presidential auspices at intervals of approximately 10 years. The other conferences were held in 1909, 1919, and 1930.

For other developments in this field, see CHILDREN'S BUREAU.

CHILE. A South American republic. Capital, Santiago.

Area and Population. Area, 286,396 square miles; population, estimated at 4,634,839 on Dec. 31, 1938 (4,287,445 at 1930 census). Among the 105,463 aliens residing in Chile in 1930 were 23,439 Spaniards, 11,070 Italians, and 10,861 Germans. In 1938 48,221 passengers entered Chile and

44,751 departed. Living births registered in 1938 numbered 154,918 (33.6 per 1000); deaths, 113,723 (24.6); marriages, about 37,487 (8.1). The population is predominantly European (chiefly Spanish) in origin, but there is a considerable Indian strain in the lower classes. Populations of the chief cities (1930): Santiago, 696,231; Valparaíso, 193,205; Concepción, 77,589; Antofagasta, 53,591; Viña del Mar, 49,488; Iquique, 46,458; Talca, 45,020.

Defense. All young men of 20 are conscripted, mostly for one and a half years, and then serve in the reserve until their 45th year. The active peace-time army totals about 30,000 officers and men; air force (1938), 210 airplanes; navy, 1 battleship, 1 coast defense vessel, 3 cruisers, 8 destroyers, 9 submarines, and various auxiliary vessels, with a complement of about 8000 officers and men.

Education and Religion. Education is compulsory for children of 7 to 15 years, but about 75 per cent of the adult population is estimated to be illiterate. Educational statistics for 1937 were: Primary, 4663 schools, 587,108 pupils; secondary, 235 schools, 44,199 pupils; normal, 10 schools, 1597 pupils; commercial, 24 schools, 3054 pupils; special, 153 schools, 31,655 pupils; universities, 4 with 6270 students. The Roman Catholic religion, formerly maintained as the state church, was disestablished in 1925.

Production. At the 1930 census 37.8 per cent of the working population was engaged in agriculture and 22.1 per cent in industry, including mining. Yields of the chief crops in 1937-38 were (in metric tons): Wheat, 824,300; barley, 163,800; oats, 120,400; corn, 56,200; potatoes, 437,400; wine, about 4,000,000 hectoliters (hectoliter equals 26.42 U.S. gal.). Wool production in 1937 was about 16,200 metric tons. Mineral output in 1938 was (in metric tons): Nitrate, 1,405,200 (1,437,500 in 1937); copper ore (metal content), 351,400; iron ore (metal content), 950,000; coal, 2,061,000. Gold production (in fine kilograms) was 9144; silver, 43,984. The nitrate industry employed an average of 20,147 miners in 1938.

Wages paid by manufacturing industries in 1938 totaled 1,716,000,000 pesos (1,522,800,000 in 1937). Manufacturing production included: Cement, 8,564,000 bags (of 42.5 kilos); coke, 79,368,000 kilos; knitting wool, 447,000 kilos; cloth, 3,330,000 meters; refined sugar, 126,160,000 kilos; beer, 61,987,000 liters.

Foreign Trade. Imports in 1938 totaled \$103,466,000 (\$88,389,000 in 1937); exports, \$140,607,000 (\$195,298,000). Conversions from gold pesos to dollars were made at \$0.2061 for both years. The United States supplied 27.7 per cent of the imports (29.1 in 1937); Germany 25.7 (26.0); United Kingdom, 10.6 (10.9). The United Kingdom took 21.8 per cent of the 1938 exports (19.6 in 1937); United States, 15.8 (22.5); Germany, 10.0 (9.5). Values of chief 1938 exports (in 1000 gold pesos): Copper bars, 328,818; nitrate, 141,557; wool, 25,346.

Finance. Actual governmental revenues in 1938 were 1,635,000,000 pesos; ordinary expenditures, 1,664,000,000 pesos. Budget estimates for 1939 were: Revenues, 1,666,872,000 pesos; expenditures, 1,666,867,000. The accumulated budget surplus as of Dec. 31, 1938, was 14,940,000 pesos. The public debt on Dec. 31, 1938, was divided as follows: Internal (in Chilean pesos), 1,851,732,768; external (in U.S. dollars), 382,151,098. Exchange rates of the paper peso in 1938 were: Official,

\$0.05162 (\$0.05162 in 1937); export, \$0.04004 (\$0.03987); free, \$0.03684 (\$0.03831).

Transportation. Chile in 1938 had about 5450 miles of railway lines, of which 1815 miles were privately-owned. All lines (1938) carried 20,220,000 passengers and 10,036,400 metric tons of freight. The State lines took over operation of the Iquique-La Noria Railway Sept. 11, 1939, from private control. Highways in 1939 extended 22,613 miles (see **ROADS AND STREETS**). Domestic airlines in 1938 reported 601,106 kilometers flown, 3711 passengers, 8310 kilos of mail and 20,436 kilos of freight carried (kilo equals 2.2 lb.). The tonnage of vessels entering the ports with cargo and in ballast in 1938 was 2,724,000; tonnage cleared, 2,700,000.

Government. By the Constitution of Oct. 18, 1925, executive power is vested in a President, aided by a cabinet responsible to him. Legislation is the function of the National Congress, consisting of a Senate of 45 members elected for 8 years and renewed by halves every 4 years, and a Chamber of Deputies of 146 members elected for 4 years by departments. The President, chosen for 6 years by direct popular vote, is ineligible to succeed himself. Pedro Aguirre Cerda (Radical) was elected President by a Popular Front coalition of the Radical, Socialist, Radical Socialist, Democratic, and Communist parties on Oct. 25, 1938, and assumed office Dec. 24, 1938.

HISTORY

President Aguirre Cerda's Popular Front regime, assuming office in December of 1938 with a pledge to "end conditions in which the Chilean masses lack food, culture, clothes, and dwellings," faced unexpected difficulties in carrying out its programme during 1939. On the night of January 24 the most disastrous earthquake in Chilean history wrecked cities, towns, and farm dwellings throughout six of the richest agricultural provinces in central Chile. The quake razed virtually every building in Chillán, a city of nearly 50,000, and ruined Concepción, Parral, San Carlos, Yungay, Talca, Talcahuano, and a score of additional towns and cities. It spread damage as far north as Santiago and southward to Valdivia. Railways and highways were rendered unsafe, water systems and other public utilities disrupted, and the entire economic life of the region paralyzed. Nearly 50,000 persons were killed and 700,000 made homeless. Property damage was estimated at \$30,000,000 to \$50,000,000. See **EARTHQUAKES**.

A second major setback to Chile's economic prosperity came with the outbreak of the European war in September. This virtually eliminated trade with Germany, curtailed export markets, and caused an increase of prices in imported necessities. The Popular Front regime had to contend, in addition, with vigorous opposition to its programme from the Rightist majorities in the Senate and Chamber of Deputies, and with sporadic revolts and conspiracies by discontented army officers and politicians. The menace of civil war, which appeared perilously near during the latter part of 1938, hung over all political discussions during 1939.

Popular Front Programme. Previous to the earthquake, the President and his cabinet worked at full speed upon a far-reaching programme for increasing national production and improving the status of the masses, largely at the expense of the wealthy land-owning class that had ruled Chile since the proclamation of its independence. The

government services, defense forces, rural police and the various public administrative agencies were reorganized and purged of Rightists holding key positions. Effective measures were taken to reduce the price of flour, wheat, bread, meat, vegetables, cement, and other construction materials. Pawned tools and machinery by which the poor earned their living were returned to the owners without cost. A nation-wide programme of highways, public housing, and electric power projects was begun. Reorganization of the educational system was undertaken with the aim of reducing illiteracy, abolishing religious influences and teaching industrial and commercial rather than professional skills.

The political appeal of this programme was demonstrated in elections held to fill three vacant places in the Chamber of Deputies on January 23. Socialist candidates, supported by the Popular Front groups, overwhelmingly defeated their Rightist opponents. The earthquake of the following day produced a short political truce. But the battle between the forces of Left and Right was resumed with renewed intensity when the government decided to link its plans for the systematic development of national production with an equally ambitious programme for reconstruction of the devastated regions.

President Aguirre Cerda asked Congress on January 31 to authorize loans totaling 2½ billion paper pesos to finance both programmes. The enabling bill called for sharp increases in income, inheritance and other taxes, a 10 per cent extraordinary tax on the income of large American-owned and other mining concerns, and higher license fees for certain manufacturers, concessionaires, merchants, and on mining claims covering borax and its compounds. The Rightist Deputies and Senators in general approved the government plans for repair of earthquake damage. But they strenuously opposed linking them with the equally costly production development programme. There were weeks of bitter debate on the various provisions of the bill, marked by great demonstrations of Popular Front supporters against the Rightist majority in Congress. When the measure reached the President it was so altered that he vetoed portions of it. On April 27, under strong pressure from the government and the Popular Front movement, Congress finally accepted the modifications demanded by President Aguirre Cerda.

Reconstruction-Production Law. The law as promulgated April 28 provided for the creation of two fiscal corporations—the Reconstruction and Relief Corporation and the Corporation for the Promotion of Production, each with a board of 24 directors, headed by the Secretary of the Treasury, and an executive vice chairman elected by the directors.

The President was authorized to raise loans in foreign currency up to 2,000,000,000 paper pesos (about \$80,000,000), to be equally divided between the two corporations. He was also empowered to contract internal loans up to 500,000,000 pesos (\$20,000,000) for the construction of low-cost housing, particularly in the devastated region. Pending flotation of foreign loans, the President was authorized to use funds set aside for service of the foreign debt.

The Reconstruction and Relief Corporation was granted wide powers over loans, expropriations, reconstruction, and every form of aid to the earthquake-shattered districts. Its existence was limited

to six years. The Corporation for Promotion of Production was made a permanent institution. The government sought wide legislative and executive powers for this corporation, but due to Rightist opposition the law restricted its authority to proposing legislation and executing the laws enacted for that purpose by Congress. The Corporation was placed in full charge of the 500,000,000-peso housing project.

The government made soundings regarding a large loan in the United States but succeeded only in obtaining a \$5,000,000 credit from the Export-Import Bank of Washington, to be repaid over an eight-year period with interest at 4 per cent annually. The Minister of Finance announced on August 8 that the bulk of the funds for carrying forward the work of the two corporations would be obtained from internal sources, as follows: Extraordinary taxes, 1,000,000,000 pesos; advances against loans, 500,000,000 pesos; banking loans, 500,000,000 pesos. The extraordinary taxes were exacted largely from copper exports and other levies on foreign-controlled mining enterprises. With funds from these sources rapid progress was made in providing relief and emergency shelters for the population of the earthquake districts, starting permanent reconstruction of towns and cities with shock-resistant materials, and initiating the public works and other projects designed to increase national productivity and the standard of living.

Many of these projects carried a step further the policy of establishing greater state control over foreign-owned economic enterprises of all kinds. It was announced on May 30 that a government monopoly of the distribution and sale of petroleum products would be established September 3.

Political Dissensions. Opposition attacks upon the government grew more intense following the passage of the Reconstruction and Promotion Law. On May 27 the Chamber of Deputies forced the resignation of Minister of Interior Pedro Alfonso for confiscating copies of the Conservative party's organ containing "biased and unfair" attacks against the government. The President strongly upheld the action of his Minister and Señor Alfonso was reinstated on June 22 when the Senate failed by a narrow margin to support the Rightist charges against him.

The agitation for violent overthrow of the government was actively supported by Nazi elements among the German-speaking population and by the Chilean branch of the Spanish Fascist movement. The government deported several leading Germans charged with Nazi propaganda and took steps to curb Nazi-Fascist penetration of the educational system. On July 9, 30 former army and rural police officers were arrested for plotting against the government. Some of them admitted connections with the Spanish Fascists. Investigation of the conspiracy led to the arrest on July 18 of the director of the School of Military Engineering. It was charged that supporters of former President Carlos Ibáñez del Campo were involved in a wide-spread movement among the defeated Rightist groups.

The arrest and subsequent dismissal from the army of the Engineering School head was made the subject of violent debate in Congress, with Rightists seeking the resignation of the Minister of War. The controversy was interrupted by another abortive revolt on August 25, led by former President Ibáñez del Campo and Gen. Ariosto



Brown Brothers

GEN. CHIANG KAI-SHEK

Nationalist commander-in-chief, appointed Premier of Chungking regime, November, 1939



Brown Brothers

WANG CHING-WEI

Chinese ex-Premier selected by Japanese to head puppet government for occupied provinces



Wide World

JAPANESE TROOPS ATTACKING CHINESE POSITIONS IN INNER MONGOLIA

THE FAR EAST



Wide World

SOVIET-JAPANESE HOSTILITIES

Japanese machine-gun unit in action against Soviet-Outer Mongolian forces on the disputed Khalka River frontier of western Manchoukuo in the summer of 1939. A disabled Soviet tank is shown in the background.



Wide World

THE BOMBING OF CHUNGKING

The bomb-scarred main gateway into the Chinese provisional capital, target of numerous devastating Japanese air raids during 1939. The frequent air attacks failed to shatter Nationalist resistance.

Herrera. This movement, which apparently had wide support among army officers, was discovered and broken up by the government without bloodshed. A state of siege was proclaimed and the government obtained emergency powers to deal with the crisis. General Ibáñez escaped to the Paraguayan Legation and subsequently to Argentina, but General Herrera and 65 other officers and civilians were arrested. Military courts subsequently exiled General Herrera and 40 other officers to other South American countries, while many civilians, including former military men, were ordered to reside in small villages in northern Chile.

The military revolt was denounced by many Rightist members of Congress, but it spurred extremist elements in the Popular Front to demand more radical measures of both an economic and political character. The President resisted these demands. His government took steps to distribute in various parts of the country several thousand Spanish Republican refugees and some hundreds of German and Austrian Jews who were offered new homes in Chile. This lessened the danger of their becoming a political problem. He also declared a policy of strict neutrality in the European war, taking rigorous measures to check price rises and profiteering. On September 9 the government acted through the Exchange Control Commission and the Commissariat of Prices to curb speculation. Scores of business houses were closed or fined for increasing prices and unduly restricting sales. Yet shortages in coal and other imports developed and prices increased, thus obstructing the government's programme for raising the standard of living.

The country's largest textile mill was closed by labor trouble November 20. On December 4 a Leftist crowd attacked ex-President Alessandri and his son when they landed at Antofagasta. Economic and financial conditions became more difficult and the Leftist press accused Rightists of sabotaging the government's rehabilitation program. On December 26 Finance Minister Roberto Wachtoltz resigned from the government because of unspecified "difficulties."

Foreign Relations. The Popular Front Government did not allow its Leftist sympathies to interfere with Chile's important barter trade with Nazi Germany. At the same time it strove to develop commercial relations with all of the American nations. A barter agreement with Brazil was made in July. The economic and cultural agreements negotiated with Bolivia in 1938 (see 1938 YEAR BOOK, p. 97) were ratified by Congress on August 24. A plan for making Arica a free port, with the hope that it would become a more important commercial centre for the trade of Bolivia, Peru, Chile, and northern Argentina found substantial support in the Chilean Congress and government.

After the European war began, there was an important shift of Chilean trade from Germany to the United States. The \$5,000,000 loan obtained at Washington aided this trend, and on October 2 Secretary Hull announced the U.S. Government's intention of negotiating a reciprocal trade treaty with Chile. A number of Chilean army, air, and naval officers were sent to the United States during the year to take courses of instruction in various defense units. Late in the year a Chilean military commission visited the United States to make artillery and other armament purchases. On November 10 it was announced that a U.S. army

air mission would be sent to Chile to instruct the air force.

The friendship of the other American republics was strikingly demonstrated by the immediate and generous aid sent to Chile from many parts of the hemisphere upon news of the earthquake of January 24. Aid from Argentina was the first to arrive, and this circumstance added to the great enthusiasm with which Chile joined on May 25 in celebrating the 129th anniversary of Argentine independence. In August Argentina took the lead in forming a bloc of South American nations that supported Chile in its dispute with the Franco Government in Spain over the right of the Chilean Legation in Madrid to harbor Spanish Loyalists who sought refuge there upon the surrender of the capital. Franco finally agreed on October 15 to allow four former Loyalist officials to leave the Legation and take refuge abroad. Thirteen others remained under Chilean protection.

Possibly due to the influence of its Communist supporters, the government in December refused to join in an inter-American protest against the Russian attack upon Finland.

See ARGENTINA, BOLIVIA, BRAZIL, and URUGUAY under *History*; INDUSTRIAL CHEMISTRY; MILITARY PROGRESS; PAN AMERICANISM.

CHINA. A republic of eastern Asia. Provisional capital, Chungking. Nanking, the former capital, was captured by the Japanese in December, 1937, and Hankow, to which most of the Chinese Ministries were then transferred, fell in October, 1938.

Area and Population. Including the nominal dependencies of Sinkiang (Chinese Turkestan), Outer Mongolia (see MONGOLIA), and Tibet (q.v.), over which the Central Government exer-

AREA AND POPULATION OF CHINA

Province (Capital ^a)	Sq. miles	Population
Anhui (Anking)	51,902	23,265,368
Chahar ^b (Wanchuan, Kalgan, Chang-chiakow)	107,705	2,035,957
Chekiang (Hanghsien, Hangchow)	39,791	21,230,749
Fukien (Minhou, Foochow)	61,275	11,755,625
Heilungkiang ^c (Lungkiang, Tsitsihar)	173,600	3,822,344
Honan (Kaileng)	66,693	34,289,848
Hopei (Paoing since June 1, 1935)	59,377	28,644,737
Hunan (Changsha)	91,595	28,293,735
Hupeh (Wuchang)	80,190	25,541,635
Jehol ^d (Chengtch)	74,297	3,054,306
Kansu (Kaolan, Lanchow)	145,968	6,705,445
Kiangsi (Nanchang)	77,301	15,820,406
Kiangsu (Chinkiang)	41,830	36,469,328
Kirin ^e (Tungki, Kirin)	109,413	7,666,641
Kwangsi (Yungning, Nanning)	84,007	13,385,218
Kwangtung (Fanyu, Canton, Kwangchow)	83,940	32,385,215
Kweichow (Kweiyang)	69,297	9,043,207
Liaoning ^f (Shenyang, Mukden, Fengtien)	124,256	16,465,303
Ningsia ^g (Ningsia)	106,143	1,023,143
Outer Mongolia ^h (Kulun, Urga ⁱ)	625,946	2,077,669
Shansi (Taiyuan)	58,662	11,601,026
Shantung (Tsinan)	69,216	38,029,294
Shensi (Changan, Sian)	72,353	7,717,881
Sikang (Kangting)	143,475	968,187
Sinkiang ^j (Tihwa, Urumtchi)	705,953	4,360,020
Suiyan ^k (Kwaisui, Kweihua)	125,220	2,083,693
Szechwan (Chengtu)	166,529	52,961,269
Tibet ^l (Lhasa)	469,416	3,722,011
Tsinghai (Sining)	269,187	1,196,054
Yunnan (Kunming, Yunnanfu)	123,572	11,994,549

^a Where more than one name is given for the respective capitals in parentheses, they represent the official name, postal map name, and popular or ancient name, in the order given. ^b Chahar, Ningsia, and Suiyuan Provinces, together with part of Jehol, form the geographical region known as Inner Mongolia. ^c The Provinces of Heilungkiang, Kirin, and Liaoning constitute the geographical region known as Manchuria, which on Feb. 18, 1932, was proclaimed the free state of Manchoukuo. Jehol Province was incorporated in Manchoukuo in 1933. ^d Dependencies. ^e The Mongol name for Urga has been changed to Ulan Bator Khoto.

cised little or no actual control, and the former Chinese Provinces incorporated in the Japanese protectorate of Manchoukuo (q.v.), China has an area estimated by the Ministry of the Interior in 1937 at 4,516,934 square miles and a total population of 466,785,856. Official 1937 estimates of the area and population by Provinces are shown in the table on preceding page.

As no census has been taken in modern times, the above figures are merely rough estimates. Including the nominal dependencies, the area is roughly equal to that of the United States and Mexico combined, while the population is approximately one-fourth of the world's total. In addition there were estimated to be 7,828,888 Chinese residing abroad in 1936. The Japanese civilian population of North China was reported at 177,000 on Oct. 31, 1939, having increased by an average of 7000 monthly during the first 10 months of the year. The estimated population of Shanghai and its environs in 1936 was 3,489,998 including 1,450,685 persons in the Foreign Settlements; of Peiping, capital of China until 1928, 1,556,364; of Tientsin, 1,292,025; of Nanking, 1,019,948; of Tsingtao, 514,769. Estimated populations of the other chief cities in 1931 were: Canton, 861,024; Hankow (including Wuchang and Hanyang), 777,993; Chungking, 635,000; Wenchow, 631,276; Changsha, 606,972; Hangchow, 506,930; Weihaiwei, 390,337; Foochow, 322,725; Soochow, 260,000; Amoy, 234,159; Ningpo, 218,774; Wanhhsien, 201,937; Chinkiang, 199,776.

Education and Religion. Between 25 and 50 per cent of the population were estimated to be literate in 1937, compared with an estimated 15 per cent in 1912. In 1935 there were 16,000,000 children in primary schools, of whom 12,383,479 were in 259,095 regular schools and the rest in one-year primary schools. For secondary education, there were in 1934-35, 3140 schools of all kinds, with 541,479 students. There were 107 institutions of higher learning in 1937 and 41,768 students attending them in 1935 (6200 women).

With the exception of Christians and Mohammedans, most Chinese practise and profess all three indigenous or adopted religions—Confucianism, Buddhism, and Taoism. The Mohammedans are estimated at about 20,000,000. In 1934 there were 2,623,560 native Roman Catholics and 123 Catholic missions, with a staff of 16,241. The Protestant churches, with 1130 mission stations and 488,539 communicants in 1932, had 19 colleges, 267 middle schools, and 37,714 students in 1934.

Production. Previous to the outbreak of the Chino-Japanese War in 1937, China was the world's leading producer of rice, soybeans, tea, kaoliang, sweet potatoes, millet, and vegetable oils; it ranked second in the output of raw silk and wheat; third in cotton, and was an important producer of corn, tobacco, fruits and vegetables, and cane sugar, as well as the leading exporter of eggs and tung oil. Estimated production of wheat in 1939 was 640,000,000 bu.; cotton, about 1,800,000 bales (of 500 lb. each). Production of other crops, in metric tons, was: Rice, 48,014,900 in 1936-37; barley, 6,371,000 in 1937; oats, 852,500 in 1937; corn, 6,130,100 in 1936; tobacco, 633,700 in 1936; cotton-seed, 1,630,000 in 1937; linseed, 12,200 in 1937 (exports); rape-seed, 2,478,600 in 1936; sesamum, 865,000 in 1936; ground-nuts, 2,631,100 in 1936; soybeans, 5,911,000 in 1936.

Tea production is estimated at from 300,000 to 500,000 metric tons (exports in 1938, 41,600 metric tons). Raw silk exports, including Manchuria, were 3950 metric tons in 1938; wool production, 55,000 metric tons in 1937.

China is normally one of the world's principal producers of antimony, tin, tungsten, and manganese. It produces substantial quantities of coal, oil, fluorite, mercury, galena, gold, silver, and many other metals. For 1936 mineral production, see 1937 YEAR BOOK. The war caused a sharp curtailment of production during 1937-39. The metal content of leading minerals produced was (in metric tons): Manganese ore, 600 in 1937 (exports); iron ore, 250,000 in 1937 (exports); tin ore, 900 in 1938; tungsten ore, 7415 in 1938 (exports); antimony ore, 15,200 in 1937. China's rapidly growing industries (see 1937 YEAR BOOK, p. 152) suffered a severe setback as a result of the war, but a marked development of manufacturing in the western provinces resulted.

Foreign Trade. Merchandise imports in 1938 were valued at 886,199,569 yuan (Chinese standard dollars); exports, 762,641,058 yuan. In old U.S. gold dollars, the figures were: Imports, \$154,200,000 in 1938 (\$165,100,000 in 1937); exports, \$90,600,000 (\$145,100,000). In 1938 Japan supplied 28.76 per cent of the recorded imports (18.12 per cent in 1936); United States and Philippines combined, 17.32 (20.07 in 1936). Of the recorded exports, the Japanese Empire took 21.71 per cent in 1938 (19 in 1936); United States and Philippines, 19.6 (30 in 1936). See IMPORTS AND EXPORTS.

Finance. Budget estimates of the National Government at Chungking totaled 2,400,000,000 yuan for 1938 and 2,800,000,000 yuan for 1939. Actual budgetary returns since the outbreak of the Chino-Japanese war in 1937 were not available. The National Government's total debt as of Dec. 31, 1935, was officially estimated at 5,794,655,187 yuan. Between the outbreak of war in July, 1937, and November, 1939, war loans totaling an additional 2,800,000,000 yuan were issued. Credits were also obtained from the United States (\$25,000,000 U.S. in December, 1938); Great Britain (£5,000,000 in March, 1939); and the Soviet Union. Interest on the foreign debt was suspended in January, 1939, and in March interest on salt-secured loans was also suspended, due to Japanese seizures of customs, salt and other revenues pledged for the loan service. However the Chungking Government announced that it was setting aside in the Central Bank of China a share of the long-term debt service, in Chinese currency. The government's monetary gold reserves were reported at the equivalent of 12,000,000 old U.S. gold dollars on Sept. 30, 1939. Between June 30, 1937, and June 30, 1939, the note issue of government and state-guaranteed banks increased from 1,643,000,000 to 2,866,000,000 yuan, partly due to the substitution of notes for silver coins and the purchase of gold. The yuan, or Chinese standard dollar, exchanged at an average of \$0.2961 in 1937, \$0.2136 in 1938 and \$0.1188 in 1939. In the summer of 1939 it declined to a new level of U.S. \$0.08.

The North China provisional government at Peiping announced that its revenues in 1938 totaled 132,000,000 "Federal Reserve Bank" yuan (73,000,000 from customs) and expenditures 53,000,000 yuan (1 yuan equals 1 Japanese yen). See *History* for further details.

Railways. Reconstruction and extension of

transportation and communication facilities was extremely active in both the Japanese-dominated and Chinese-held regions during 1939. At the end of July, 1939, the Japanese were reported to be in control of 4546 miles of railways while about 2285 miles were held by the Chinese. Despite activities of Chinese guerrillas, the Japanese made progress in repairing and reopening railways captured from the Chinese. Operations on many of the important lines were restricted to military traffic. Conversion by the Japanese of the 148-mile Shihchiachwang-Taiyuan railway in Shansi Province from narrow-gauge to standard-gauge was completed late in September.

The Chinese rushed new railway and highway projects to replace those lost to the advancing Japanese and to maintain the flow of foreign munitions and supplies. With the Japanese drive on Nanning, the Chinese abandoned the work of extending the Hunan-Kwangsi Railway from Kweilin to Nanning, making Liuchow the terminus. Work on two railways, connecting Kunming with the Burma railway network and with Suifu on the upper Yangtze in Szechwan, started late in 1938 and were continued throughout 1939. On Jan. 24, 1939, the British and Chinese governments signed an agreement for railway and air passenger services between Yunnan Province and Burma.

Highways. Highway mileage in all China was estimated at 61,430 in 1937. During 1937-39 the National Government and subordinate provincial authorities constructed over 10,000 miles of additional roads, while the Japanese reported adding 8700 miles of public motor roads to the 15,161 miles in operation in North China at the time of the Japanese conquest. The Chungking Government opened to traffic late in 1938 the 650-mile highway connecting Kunming with the Rangoon-Lashio railway and road system in Burma. This gave all western and southwestern China an outlet to the sea through neutral territory. A bus service over this road was opened at the end of July, 1939, and American trucking experts were engaged to organize the service of supply. In the late summer heavy rains temporarily interrupted traffic on this highway. To supply Nationalist armies in northwest China, another truck road was constructed through Lanchow to Sinsinchia on the Kansu-Sinkiang border, from which point imports and exports were relayed to the Soviet border. A third new outlet to foreign munitions supplies was sought through the construction of a highway from Chungking westward to Tachien-lu near the Tibet border in Sikang Province, completed late in 1939. From there Chinese authorities planned to extend it with Tibetan and British-Indian co-operation across Tibet and southward to Calcutta. Numerous minor highway projects were under construction. See **ROADS AND STREETS**.

Air Services, etc. After the fall of Hankow in October, 1938, air services in Nationalist China were restricted to routes between the West China cities and Hong Kong and Hanoi, French Indo-China. Under the Anglo-Chinese air agreement of Jan. 24, 1939, Kunming became a port of call on the Rangoon-Hong Kong extension of the Imperial Airways trunk line from London. Mail and passenger service between Chungking and Haiphong, French Indo-China, was started Mar. 15, 1939, via Kunming and Hanoi. In September the China National Aviation Corporation (Sino-American) was instructed by the

Ministry of Communications to take over services previously operated by the Sino-German Eurasia Aviation Corporation between interior cities and Hanoi and Hong Kong. On October 30 the same company inaugurated a Chungking-Kunming-Rangoon mail and passenger service. A Sino-Soviet mail and passenger service was opened between Chungking and Moscow on December 5. Japanese air lines connecting the chief Japanese cities with Shanghai, Nanking, Tsingtao, Tientsin, and Peiping were opened during 1937 and 1938. Among the new Japanese-operated lines opened in 1939 were: Peiping-Dairen; Peiping-Shanghai via Tientsin, Tsinan, Hsuehchow and Nanking; Peiping-Tatung via Kalgan.

Hong Kong-Chungking and Hong Kong-Manila radio-telephone services were formally inaugurated Aug. 15, 1939.

Government. The Nationalist Government at the beginning of 1939 represented a Kuomintang (Nationalist party) dictatorship. The Organic Law of Oct. 4, 1928, revised on Dec. 29, 1931, and Dec. 27, 1932, vested supreme power in the National Congress of the Kuomintang, acting through the Central Executive Committee, the Central Supervisory Committee, and the Central Political Council. Executive control, however, rested mainly in the hands of Gen. Chiang Kai-shek, commander-in-chief of the Nationalist armies. Pending the projected establishment of representative government, governmental functions were carried on by means of a committee system (for description, see 1932 YEAR BOOK). The chairman of the State Council and nominal head of the government was Lin Sen. The chairmen of the five yuan (committees) of the government were: Executive, Dr. H. H. Kung; Legislative, Sun Fo; Judicial, Chu Cheng; Examination, Tai Chi-tao; Control, Yu Yu-jen. Assisting Dr. Kung in the executive branch were nine ministries, headed as follows after the cabinet reorganization of Jan. 2, 1938: Interior, Gen. Ho Chien; Foreign Affairs, Dr. Wang Chung-hui; Military Affairs, Gen. Ho Ying-chin; Finance, Dr. Kung; National Economy, Dr. Oong Wen-hao; Railways and Communications, Dr. Chang Chia-ngau; Education, Chen Li-fu. The Ministry of Judicial Administration, headed by Hsieh Kuan-sheng, was subordinate to the Judicial Yuan. For developments in 1939, see *History*.

HISTORY

Progress of War. The Japanese effort to subjugate China by force of arms, which began in July, 1937, was pushed relentlessly throughout 1939, but with few of the sensational gains registered by Japanese armies in the preceding years. The territories occupied by the Nipponese at the close of 1938 (see map in 1938 YEAR BOOK, p. 152) were only slightly enlarged by the end of 1939. Successful drives on Nanchang and Nanning, occupation of the port of Swatow and of the Island of Hainan, and the tightening of the blockade along the entire seacoast represented the major Japanese accomplishments of the year in the military sphere. The fall of Nanning, cutting the highway over which the Chinese received a large proportion of their munitions and supplies, was a particularly severe blow.

These Japanese gains were offset by unprecedented defeats inflicted upon large Japanese forces by the Chinese, notably in repulsing a major

offensive against Changsha. Japanese drives up the Han valley from Hankow, along the Peiping-Hankow railway from Hankow, and against Chinese forces in Shansi Province were likewise broken by stubborn Chinese resistance. The invaders failed also in repeated efforts to end the widespread and well-organized Chinese guerrilla warfare throughout most of the territories under nominal Japanese control. The Japanese made discouragingly slow progress in the economic exploitation of their conquest and in their persistent efforts to establish a central Chinese puppet regime that would draw support away from the Chungking Government.

The end of 1939 found the Chinese seemingly more united than ever under Gen. Chiang Kai-shek's leadership, except for the growing breach between Communist and anti-Communist elements. They had fought the Japanese armies everywhere to a standstill, were waging numerous counter-offensives against the various Japanese fronts, and maintained military and political control over large areas in the rear of the Japanese armies. Chiang Kai-shek's forces, estimated at more than 2,000,000 men including guerrillas and bandits, appeared willing and able to continue the war indefinitely. On the other hand, the progressive curtailment of imports of foreign heavy arms and munitions as a result of the Japanese advances made it improbable that the Chinese could expel the invaders from the bulk of the occupied territory. The conflict had settled down to a war of endurance in which Chinese manpower was matched against Japanese economic resources.

War Losses. The Chinese losses had been enormous. The Japanese Imperial Headquarters placed the number of Chinese soldiers killed in battle between July, 1937, and November, 1939, at 1,218,462. A neutral estimate placed Chinese casualties to June 30, 1939, at 2,200,000 including 900,000 war dead. In addition 40,000,000 Chinese civilians had been driven from their homes and from 5,000,000 to 10,000,000 had died of disease, starvation and privation due to the war, according to a "conservative estimate" made by Rear Admiral Harry E. Yarnell, former commander of the U.S. Asiatic fleet, on Dec. 11, 1939. The Sino-Japanese war, he said, had caused "more death, destruction, misery and suffering than resulted from the great World War of 25 years ago." On September 11 foreign relief authorities in Shanghai estimated that 25,000,000 Chinese faced starvation during the coming winter as a result of drought in Shantung Province and floods in Hopeh Province and the Yellow River basin.

The Japanese were reported to have employed between 800,000 and 1,000,000 troops in China proper during 1939. Besides some 220,000 troops garrisoning cities and guarding lines of communication, there were approximately 300,000 men in the Hankow area in the spring of 1939, 200,000 in Honan, Hopei, and Western Shantung, 120,000 in Shansi, and about 60,000 in the Canton area. In addition Japan was maintaining over 300,000 troops in Manchoukuo and some 40,000 in Korea. The dispatch of an Imperial Guards division to China toward the end of 1939 was taken by the Chinese as a sign of Japan's growing shortage of trained soldiers. Neutral sources estimated Japanese casualties from July, 1937, to July, 1939, at about 330,000 killed and 470,000 wounded. An official Chinese estimate placed total Japanese casualties at 400,000 during 1939 and 350,000

during 1938. The Japanese reported their battle deaths in China proper between October, 1938, and November, 1939, at only 27,000.

Japanese Strategy. The first two years of the conflict cost Japan about five times as much as the Russo-Japanese War, used up three-fourths of the Japanese gold reserves, greatly increased the national debt and in other ways weakened Japan's military-economic strength. The Japanese dilemma grew more serious throughout 1939. If they launched further great offensives, the cost in men and money would be high, the Japanese lines of communication would be further extended, and there was no certainty that Chinese resistance would be crushed. If the Japanese stood on the defensive and attempted to consolidate their military control of the occupied regions, the Chinese would be free to train and equip additional troops in the west while concentrating their energies on guerrilla warfare behind the Japanese lines.

Early in the year the Japanese general staff adopted a middle-of-the-road policy, combining moderately ambitious offensive operations against Chiang's main armies with an intensified campaign to stamp out Chinese guerrillas. These efforts were supplemented throughout the year by systematic, large-scale, relentless air raids upon all the Chinese cities and communications centers still under Chiang's military control. In the first seven months of 1939, these raids caused 40,000 civilian casualties (20,000 deaths), according to the Chinese. In one raid on Chungking (May 4) 4572 were killed and 3637 wounded. Some 1200 raids were reported for the seven-month period and about 32,000 bombs were dropped.

At the same time the Japanese attempted to regain at least part of the cost of their conquests by organizing the economic exploitation of the occupied territories. As this effort was hamstrung by Chinese non-co-operation, the Japanese strove to establish within the conquered territories a Chinese government, pledged to economic and political co-operation with Japan, that would prove more successful than the existing discredited puppet regimes at Peiping and Nanking in attracting Chinese support.

Military Campaigns. The first successful advance of the year was the occupation by the Japanese navy on February 10 of Hainan Island, despite the Anglo-French warnings issued in 1938 (see 1938 YEAR BOOK, p. 159). Early in February Japanese armies on the Yangtze River front launched several offensives. A new, and this time successful, drive from Kiukiang southward along the railroad to Nanchang was crowned with the capture of the latter city on March 27. From Nanchang the Japanese marched westward along the Chekiang-Hunan railway, renewing the unsuccessful 1938 drive on Changsha. Another Japanese column advanced from Yochow on the Yangtze above Hankow along the Hankow-Canton railway against Changsha. But in April both of these drives stalled against the stubborn Chinese defense. In the Nanchang area, the Chinese counterattacked and inflicted a severe defeat upon the Japanese. However the latter managed to hold Nanchang.

Meanwhile large Japanese forces were advancing up the Han River valley northwest of Hankow in a drive to split off the Chinese forces in northern China from Chungking and the central front. This drive carried the Japanese by the end of May into northwest Hupeh and south-

western Honan. There a firm Chinese stand blocked a further advance and then a flanking operation turned the Japanese advance into a costly and humiliating retreat. The gains of more than a month of hard fighting were wiped out in a few days.

While these Japanese offensives were in progress, Chinese forces attacked the Japanese simultaneously on a number of other fronts—in Shansi province, near Kaifeng in Honan, at Canton and elsewhere—and intensified guerrilla activities. Strong Chinese bands harassed the Japanese around Shanghai, Nanking, Peiping, and other occupied cities, ambushing patrols and small armed forces, cutting railways and telegraph lines, and reoccupying captured towns and villages as soon as the Japanese troops had advanced to new positions.

Early in June the Japanese made another attempt to drive a wedge between central and northwestern China. This time heavily reinforced armies struck westward from central Shansi at the Eighth (Communist) Route Army and Nationalist troops under Gen. Wei Li-huang defending the mountainous western districts of the province. This was the sixth successive Japanese effort to break through this mountain barrier and capture Sian, the key point from which Soviet arms and supplies were distributed to Chinese troops in Shansi, Shensi, Honan, and Hupeh provinces. But again it failed. Some 120,000 Japanese troops, operating in several columns, were making slow and costly headway when they became bogged down in August by the heaviest rainfall recorded in North China in 80 years. Military operations throughout North China were paralyzed for a month while floods destroyed strategically important railways, great quantities of armaments and supplies, and wrecked hundreds of factories in the Japanese-occupied areas. In the Shansi mountains three Japanese columns, isolated by floods, were surrounded by Chinese forces. On August 22 the Chinese announced a decisive victory and the collapse of the Japanese drive toward Sian.

The failure of this campaign was followed by a shakeup of the Japanese high command. On September 12 all land forces in China were unified under the command of Gen. Juzo Nishio, former inspector-general of Japanese military training, with an ex-War Minister, General Itagaki, as his chief of staff. These new leaders sought to recoup the prestige lost in preceding campaigns in China and in the Soviet-Japanese fighting along the Outer Mongolian-Manchoukuoan border (see MANCHOUKUO under *History*) by renewing on September 16 the pincer drive against Changsha from both Nanchang and Yochow. (A Soviet-Japanese truce was signed two days before.)

During September the Japanese advanced against strong opposition to within a few miles of Changsha. But the Chinese before retreating had made all roads and tracks impassable to the heavy Japanese mechanized equipment, which was left behind. Once they found themselves fighting the Japanese on equal terms, the Chinese launched a counteroffensive, marked by successful flank attacks on the Japanese lines of communication, that routed the Japanese and according to the Chungking Government won for the Chinese "the biggest single victory of the war." By the middle of October the Chinese had regained all the territory lost during the Japanese advance

and were once more threatening the Japanese hold on Yochow.

Meanwhile bitter fighting was continuing between smaller forces in Shansi. In the Canton area the Japanese early in October beat off a Chinese attack along the borders of the British leased territory of Kowloon on the mainland opposite Hong Kong (q.v.) and captured Shekki on the river delta on October 8.

In the last six weeks of the year the Japanese won a major victory in the extreme south of China. A large military-naval force landed near Pakhoi on November 15 and easily captured that port city in southern Kwangtung province, which had withstood an attempted landing by smaller Japanese forces in 1938. From Pakhoi an army of about 50,000 men struck inland toward Nanning in Kwangsi province. Meeting weak resistance, they succeeded in capturing that important point on November 24 and cutting the Hanoi-Nanning-Kweilin motor highway as well as the Yu River route to French Indo-China. It was estimated that over one-third of all China's imports and exports had moved over these two transport arteries previous to Nanning's capture.

From Nanning the Japanese late in December raided Nankwan on the Kwangsi-French Indo-China border, where they reported the capture of large quantities of munitions and supplies. Japanese efforts to advance northward and westward from Nanning were said to have been checked, but on December 31 the Japanese used their new Nanning base to carry out air attacks on the French-owned Indo-China-Yunnan railway, several hundred miles to the west.

Political Developments. The marked success of the Chinese armies in checking Japanese advances during the year greatly increased Chinese unity and the strength of the Chungking Government. Two hundred delegates of the Kuomintang's Central Executive Committee, meeting in Chungking in January, unanimously approved Gen. Chiang Kai-shek's plans for continuing the war. The Communists, who were not represented, also sent pledges of their continued co-operation in the struggle for independence. The committee created a Supreme National Defense Council under Chiang Kai-shek with unified military and political powers. A program was adopted for more rapid industrialization of western China to provide an economic base for military resistance to Japan.

A special session of the Supreme National Defense Council was held September 16 in Chungking coincident with a regular session of the People's Political Council, which attracted delegates from all Chinese provinces. At the same time about 40 delegates of the Chinese Industrial Cooperative Society met in the provisional capital and laid plans for adding 10,000 co-operative units during the ensuing year to the 1100 co-operatives, developed during the preceding year, which were already playing an important role in the rebuilding of the "free" provinces of China.

These meetings were a prelude to an important plenary session of the Central Executive Committee of the Kuomintang at Chungking on November 12-21. Responding to demands of both liberals and Communists, the Committee agreed to convoke a National People's Assembly on Nov. 12, 1940, "to enact and promulgate a Constitution for China." The promulgation of the Constitution, if it followed the Kuomintang po-

litical program, would end the period of Kuomintang "tutelage," under which China was ruled by a single-party dictatorship headed by Chiang Kai-shek, and inaugurate representative government based on democratic principles. Meanwhile the committee strengthened Chiang Kai-shek military and civil powers, naming him chief of the Executive Yuan, or Premier, in place of Dr. H. H. Kung. Chiang held his other posts of commander-in-chief of the armed forces, head of the National Defense Council, and director general of the Kuomintang. A general reorganization of the cabinet was also carried out.

The Communist Movement. This picture of growing Chinese unity in the face of Japanese aggression was marred in part by persistent reports of serious friction between conservative elements in the Kuomintang and the Chinese Communists.

While successfully resisting repeated Japanese invasions, the Communists led by the "Red Napoleon," Gen. Chu Teh, had established a government at Yen-an in Shensi province from which they ruled about 1,500,000 inhabitants in parts of Shensi, Kansu, and Ningsia provinces. There they introduced village and district elections, lifted the tax burden on peasants, made the income tax the chief source of revenue, and distributed the large landed estates. The influence of the Chinese Communists also spread into western Shansi and Kansu, being aided by the fact that the Chungking Government depended largely upon Soviet arms and supplies for the defense of northern China and that Soviet penetration into Sinkiang and Kansu was bringing those provinces more and more under Soviet control.

These developments aroused the alarm of anti-Communist elements in the Kuomintang, who denounced the Communist political activities as a violation of the Kuomintang-Communist pact against Japan. The Communists, on the other hand, charged that the army officers, landed gentry, and other conservative Kuomintang elements were more interested in preserving their special privileges than in organizing resistance to Japan. Notwithstanding the fact that Chiang Kai-shek held the balance of power between these two groups and followed a policy of mutual conciliation, there were repeated clashes between Communist and anti-Communist forces in the northwest during the year, even in some cases when the Japanese were pressing forward nearby.

It was reported that Communists and their sympathizers were shot or persecuted in the anti-Communist districts of Shensi, Suiyuan, Ningsia, and Kansu provinces, while the same fate was apparently meted out to anti-Communists in the districts controlled by the Yen-an government. After the Soviet rapprochement with Germany in August and the Soviet-Japanese truce of September, Chinese leaders were reported apprehensive of the possibility that the Soviet Union would reach an agreement with Japan at the expense of China. It was recognized that if Russian foreign policy so dictated, the Soviet Government was in a position to seize political control of all northwestern China through the co-operation of the Chinese Communists.

Yet the Chungking authorities were forced to accept Soviet aid and to acquiesce in the accompanying Soviet military-economic penetration. Another of the Soviet-Chinese barter-and-loan agreements for 140,000,000 U.S. dollars was concluded in August, 1939. In November it was

estimated that the Soviet Union was furnishing two-thirds of all Chinese imports of arms and munitions. Beginning in October Japanese and Chinese reports indicated that the Soviet Union was increasing its military forces in Sinkiang and supplying additional air units, aviators, technicians, military advisers, and war supplies to both the Chungking Government and the Chinese Communists. In mid-October a large Soviet military mission was reported to have reached Chungking.

Diplomatic reports received in Washington in December stated that a string of five Soviet air bases had been established along the old Gobi Desert trail from China to Russia. In the same month Shanghai dispatches reported that the Soviet Union was pressing China to recognize formally the independence of the Outer Mongolian Soviet Republic, actually a Soviet protectorate; to curb the anti-Communist faction of the Kuomintang; and to support the U.S.S.R. at Geneva. Much to Chinese alarm, the coincident Soviet-Japanese negotiations appeared to be making headway toward a general settlement.

Japanese Political Maneuvers. After vain efforts to induce Marshal Wu Pei-fu (see NECROLOGY) to become head of a centralized anti-Chungking pro-Japanese government controlling the Japanese-occupied areas, the Japanese army leaders turned their attention to Wang Ching-wei, former Premier of China, who had deserted the Chungking Government in 1938 (see 1938 YEAR BOOK, p. 157). Wang Ching-wei was active throughout 1939 in attempting to lay the foundations for his projected regime. He made the rounds of Shanghai, Canton, Peiping, and the other chief cities of "occupied" China to confer with Japanese military leaders and to seek the support of influential Chinese. In June he made a secret visit to Tokyo for conferences with Premier Hiranuma and other Japanese political leaders.

Wang's negotiations made slow progress, however. Few unimportant Chinese rallied to his support. He experienced difficulty in reaching an agreement with the Japanese army and government on the program and principles of his future government. Moreover his effort encountered the opposition and jealousy of the two puppet regimes previously established at Peiping and Nanking. (Ministers of these two governments met at Nanking on March 30 and formally repudiated all loans or credits granted to the Chungking Government by foreign powers. They also declared they would refuse to recognize any foreign [non-Japanese] vested rights or interests.)

On August 9 Wang set forth his "peace" program in a radio broadcast and called a "national convention" of the pro-Japanese faction of the Kuomintang, which convened in Shanghai on August 28. According to Japanese sources, this convention, attended by 240 delegates, unanimously elected Wang chairman of its Central Executive Committee. It adopted a political platform acceptable to the Japanese, including co-operation with Japan against communism. Although the Premier of Japan announced on October 15 that Wang's regime would be launched in November, the event had not taken place by the end of the year.

This delay was attributed partly to the Japanese military reverses and partly to the difficulty experienced by Wang Ching-wei and the Japanese

army in agreeing upon the terms of a Sino-Japanese "peace" that was to be concluded between Wang's regime and the Japanese Government. It was reported that Wang insisted upon the immediate withdrawal of Japanese troops from China proper once Chungking's resistance had ended; restoration of Chinese property seized by the Japanese; and equality between Chinese and Japanese in the economic exploitation of China.

On December 9 Wang announced that he had reached an accord on basic principles with the Japanese. It was reported at the year end that these principles included withdrawal of Japanese troops from China within two years after Wang's government concluded "peace" with Japan; nationalization of the Chinese railways; garrisoning of North China and Inner Mongolia by Japanese troops under an anti-Comintern agreement; recognition by Wang's regime of the independence of Manchoukuo; conclusion of an anti-Comintern pact by Wang's government, Manchoukuo and Japan; and joint Sino-Japanese development and exploitation of China's natural resources. Wang thus accepted the basic principles of Japan's "new order" in Eastern Asia that had been proclaimed in 1938 and reiterated in 1939 (see 1938 YEAR BOOK, p. 158 f.).

Japan's Anti-Foreign Drive. A primary feature of Japan's "new order" was the elimination of all foreign rights and interests calculated to interfere with Japanese control and exploitation of the Chinese people and their natural resources. This campaign was pressed with increasing vigor during 1939, with the Japanese concentrating their efforts upon the foreign concessions in China. A series of political assassinations of pro-Japanese Chinese in the International Settlement at Shanghai occurred early in 1939. They afforded the Japanese Foreign Office a pretext for demanding on May 3 a thorough modification of the status of the International Settlement and French Concession. At the same time Japanese military heads defied the authority of the Municipal Council of the International Settlement, which appealed to the foreign consular body for protection.

The United States, British, and French governments rejected Tokyo's demands of May 3 and firmly opposed similar Japanese pressure upon other concessions. On May 12 Japanese naval authorities at Amoy landed marines in the Kulangsu foreign settlement, demanding that the government be reorganized to give the Japanese control of the concession. Britain, France, and the United States immediately dispatched warships to Amoy and on May 17-18 detachments of British, French, and American marines, each equal in size to the Japanese force, were landed at the Kulangsu Settlement. This balked the Japanese temporarily, but the British and French marines were withdrawn upon the outbreak of the European war. The American and Japanese marines remained until October 18, when the Settlement's Municipal Council agreed to co-operate in the suppression of anti-Japanese agitation, to appoint some Japanese policemen, and to enfranchise Formosans.

The three Western powers had meanwhile displayed equally firm resistance to similar Japanese pressure on concessions at Swatow, Foochow, Wenchow, and Ningpo. In Shanghai on May 19 the International Settlement and French Concession authorities had mobilized all available de-

fense forces as a warning against a threatened Japanese coup d'état.

Tientsin Incident. Not wishing to attack the interests of the three Western powers simultaneously, the Japanese military authorities singled out the British Concession in Tientsin as the next major test in their struggle to oust foreign interests. The British authorities at Tientsin had refused to surrender to the Japanese four Chinese suspected of the assassination on April 9 of a pro-Japanese customs inspector. Over two months later, on June 14, the Japanese military leaders instituted a rigid blockade of the British and adjoining French Concessions, asserting that they would maintain it until the British reversed their policy, recognized Japan's "new order" in East Asia, and co-operated in its establishment. Roads and bridges giving access to the concessions were barricaded, food supplies were cut off, and British subjects entering or leaving were searched and often subjected to humiliating treatment, such as the stripping and slapping of both men and women. At the same time a Japanese-instigated anti-British campaign was waged throughout North China, forcing British nationals to evacuate a number of interior cities.

These tactics, for which local army commanders were responsible, had far-reaching objectives in addition to the establishment of Japanese control over the concession. The army leaders wanted to make the British the scapegoats for the failure of their military campaigns against the Chinese; to push the Tokyo Government into accepting a military alliance with Germany; and to force the British Government to end its support of the Chungking Government, particularly British financial support of the Chinese national currency.

The Japanese had sought by currency and foreign exchange control measures to squeeze foreign traders out of the conquered districts of China. But the preference of the Chinese people for the Chinese national currency, its free circulation in the foreign concessions, and its convertibility into foreign exchange had enabled the western traders to survive and had hampered the Japanese economic program. The stability of the Chinese national currency (the yuan) had been greatly strengthened in March when two British banks operating in China advanced the Chungking Government half of a £10,000,000 Stabilization Fund after receiving a British Treasury guarantee against loss.

Anglo-Japanese Negotiations. The British Government opened negotiations for a settlement of the Tientsin situation with the Foreign Office in Tokyo rather than with the intransigent Japanese military leaders in China. On July 24 the British Ambassador recognized in writing the "special requirements" of the Japanese army for maintenance of order in occupied areas of China. It was agreed that the discussions on the Tientsin incident would be governed by this formula. This seemed indirectly to recognize Japan's status as a belligerent in her undeclared war on China without subjecting her to the restrictions imposed on a belligerent under international law.

The British Government then agreed to co-operate more closely with Japanese authorities in maintaining order in Tientsin. It also consented on August 11 to hand over the four alleged Chinese assassins who had taken refuge in the Tientsin Concession. But on August 18 it rejected the Japanese demand that circulation of Chinese national currency be banned within the Tientsin

Concession. The British Ambassador stated that negotiations on the currency and silver questions could be conducted only in conjunction "with other interested powers." The Tokyo negotiations were then broken off.

The following day (August 19) a shooting affray between a British police sergeant and a Japanese-controlled Chinese police squad on the borders of the Shanghai International Settlement led to new Japanese demands upon the Municipal Council there. At the same time 6000 Japanese troops were landed in Shanghai, a Japanese force on the borders of the Kowloon leased territory made preparations to blockade Hong Kong, and restrictions on the British in Tientsin were tightened.

The stage was set for an Anglo-Japanese collision at one or all of these points when the conclusion of the Soviet-German non-aggression pact on August 24 provoked a temporary reversal of Japanese policy. Japanese troops along the Kowloon border were withdrawn and the demands on the Shanghai Settlement Council were dropped. But shortly afterward the outbreak of the European War gave the Japanese confidence that Britain and France could not resist pressure in the Far East.

Early in September the Tokyo Government gave Britain and France "friendly advice" to withdraw their troops from China "lest there be danger of Japanese involvement" in the European conflict. Japanese pressure upon the Shanghai Municipal Council was renewed. On November 12 and 13 the British and French Governments announced the withdrawal of their troops from North China, except for skeleton forces left at Tientsin. This withdrawal was accepted by both Japan and China as a tacit recognition of Japanese dominance in North China. Nevertheless the Japanese announced that the blockade of the Tientsin Concessions would be continued until Japan's "requirements are fulfilled." Toward the end of the year there were some indications that France and Britain were seeking a compromise settlement with Japan to preserve at least part of their properties and privileges in China.

Stand of the United States. Japanese officials attributed the refusal of the British and French to capitulate to Japan's demands to the firm opposition offered by the United States Government to similar pressure. Early in December Chinese sources reported that 36 American missions and schools had been damaged or destroyed and that Japanese airplanes had bombed or machine-gunned American properties more than 150 times since the outbreak of hostilities. But Washington took the lead in refusing to yield to Japanese threats and violence. On June 21 the State Department protested against the Tientsin blockade, which adversely affected American nationals in that city. On July 26 Washington abruptly denounced the Japanese-American treaty of commerce and navigation of 1911 "with a view to better safeguarding and promoting American interests" in China.

This drastic move did not change Japanese determination to establish economic and political hegemony over China. But it forced Tokyo to proceed with caution lest the United States should impose an embargo on exports of vital war materials to Japan upon expiration of the treaty on Jan. 26, 1939. Japanese-American negotiations for a renewal of the treaty and for adjustment of their controversies in China continued during

the rest of the year, without definitive results. They were marked by Ambassador Joseph Grew's assertion before the American-Japan Society in Tokyo on October 19 that the American people "deeply resented" Japanese activities in China.

"The American people," he said, "have good reason to believe that an effort is being made to establish control, in Japan's own interests, in large areas of the continent of Asia and to impose on them a system of closed economy." The Japanese Foreign Minister replied that "the determination of the entire Japanese nation to bring about a new order in East Asia is too strong to be changed or affected by the interference of a third power." November and December witnessed an increase in anti-American threats and hostility from Japanese in both China and Japan. The threats, however, were mixed with some promises. On December 18 the Japanese Foreign Minister promised the American Ambassador that his government would reopen the Yangtze River between Shanghai and Nanking to the trade of all nations and would also reopen the Pearl River leading to Canton "at the proper time."

See BURMA, FRANCE, GERMANY, GREAT BRITAIN, JAPAN, MANCHOUKUO, MONGOLIA, THAILAND, TIBET and UNION OF SOVIET SOCIALIST REPUBLICS under *History*; UNITED STATES under *Foreign Relations*; CHEMISTRY, INDUSTRIAL.

CHINESE ART. See ART EXHIBITIONS.

CHOSEN. See KOREA.

CHRISTIAN CHURCH. See DISCIPLES OF CHRIST.

CHRISTIAN ENDEAVOR, INTERNATIONAL SOCIETY OF. An organization founded in Portland, Me., in 1881 by the Rev. Francis E. Clark, D.D., a Congregational minister, for the purpose of pledging young people to certain forms of Christian devotion, expression, and service. In 1939 it consisted of 58,000 societies in the United States and Canada, with a membership of more than 2,500,000. Throughout the world there were in the same year approximately 80,000 societies, with a membership of more than 4,000,000 in 105 countries, dominions, and island groups, representing more than 80 evangelical and reformed denominations. These societies were united into national unions which, in turn, composed the World's Christian Endeavor Union.

In 1938 was held the tenth World's Convention at Melbourne, Australia, with 26 nations represented. This was followed by a world journey of Dr. Poling, the president. The outstanding event of 1939 was the International Convention in Cleveland, Ohio, and the introduction of a two-year program under the title, "Christ Calls!" The next International Convention will be held in July, 1941.

The Rev. Daniel A. Poling, D.D., LL.D., is president, and the Rev. William Hiram Foulkes, D.D., Mr. Harry N. Holmes, Rev. Arthur J. Stanley, and Mrs. Helen Lyon Jones are vice-presidents. The official magazine is the *Christian Endeavor World* (monthly). Headquarters are in the World's Christian Endeavor Building, Mt. Vernon and Joy Streets, Boston, Mass.

CHRISTIAN REFORMED CHURCH. See RELIGIOUS ORGANIZATIONS.

CHRISTIAN SCIENCE. A system of metaphysical or spiritual healing, discovered by Mrs. Mary Baker Eddy in 1866 and set forth in her textbook of the movement, *Science and Health with Key to the Scriptures*, first published in 1875. The first church was established by Mrs.

Eddy in Boston, in 1879. In 1892 it was reorganized as a voluntary religious association, known as The First Church of Christ, Scientist, in Boston, but called more frequently by its adherents "The Mother Church." The total number of recognized branches of The Mother Church in the United States reported for the fiscal year ending May 31, 1939 was 2175 and 67 college and university organizations. Total branches for the world 2853.

The affairs of The Mother Church are administered by a board of directors which supervises the work of the board of education, board of lecturership, and committee on publication. The board of education instructs and authorizes students to teach Christian Science. The board of lecturership consists of 22 members who are engaged in delivering free lectures on Christian Science.

The Christian Science Publishing Society, whose affairs are administered by a board of trustees according to the Manual of the church, issues the daily paper of the organization, *The Christian Science Monitor*. Other periodicals include *The Christian Science Journal*, *Christian Science Sentinel*, *Christian Science Quarterly*, and four editions of *The Herald of Christian Science* in the German, French, Dutch, and Scandinavian languages, each with the English translation opposite, and in Braille.

The benevolent association of the church conducts sanatoria in Brookline, Mass., and San Francisco, Calif. Pleasant View Home at Concord, N. H., is a home for Christian Scientists of advanced years. Mr. George Shaw Cook is president of The Mother Church for the year 1939-40. Headquarters are at 107 Falmouth Street, Boston, Mass.

CHRISTMAS ISLAND. The name of two separate islands. (1) An island in the Indian Ocean (10° 30' S. and 105° 40' E.), a dependency of the Straits Settlements. Area, 60 square miles; population (1938), 1313. Phosphate of lime is exported (162,000 metric tons in 1938). (2) The largest atoll in the Pacific (2° N. and 157° W.), over 100 miles in circumference, included in the (British) Gilbert and Ellice Islands Colony. It is leased to the Central Pacific Coconut Plantations, Ltd., for a period of 87 years from Jan. 1, 1914. Population (1937), 47.

CHROMIUM. Special interest attached to this metal and its ores in 1939 because the United States Government began late in the year to accumulate a stock pile of ore under authority of the Strategic Materials Act. Being a minor producer, and at the same time the leading consumer, of chromium, the United States is dependent on Rhodesia, the Philippines, Union of South Africa, Cuba, New Caledonia, and Turkey for supplies.

According to the Bureau of Mines, domestic production in 1938 was only 812 tons of high-grade ore valued at \$10,730. Imports for that year were 352,085 tons of ore containing 163,570 tons of chromic oxide.

The steel industry accounts for more than three-fourths of domestic consumption, the remainder being used in making refractories, chemicals for pigments, tanning, and chrome plating.

The Procurement Division of the Treasury Department announced late in the year the award of a number of contracts for chrome ore under the provisions of the Strategic Materials Act. One contract for 20,000 tons was awarded to the Mutual Chemical Co., export representative of

the Turkish government. Another contract for 25,000 tons of Alaskan ore was also awarded.

H. C. PARMELEE.

CHRONOLOGY. The following chronology lists the more important happenings of the year 1939 according to the dates of occurrence. In most cases, these events are treated in detail under their respective headings. To such articles, particularly those on leading countries and states, such as UNITED STATES, GREAT BRITAIN, and NEW YORK, the reader is referred for additional information. For a list of prominent persons who died during the past year, reference should be made to the article NECROLOGY and the more important obituary notices there listed. See also EUROPEAN WAR for important military events.

JANUARY

1—**Frank Murphy**, former Governor of Michigan, was appointed Attorney-General of the United States by President Roosevelt.

3—The 76th Congress convened in Washington. Premier **F. Konoye** of Japan resigned and was succeeded by Baron **Kichiro Hiranuma**.

5—President **Roosevelt** in his budget message to Congress asked for \$9,000,000,000 for the year beginning July 1, 1939, including more than \$1,390,000,000 for national defense and \$2,266,000,000 for recovery and relief.

Felix Frankfurter, Harvard law professor, was nominated by President **Roosevelt** for justice of the U.S. Supreme Court. He was confirmed on January 17, succeeding Justice **Benjamin Cardozo**.

7—**Thomas J. Mooney**, serving a life term for the bombing of the San Francisco Preparedness Day Parade on July 22, 1916, was pardoned by Gov. **C. L. Olson** of California.

11—Prime Minister **Neville Chamberlain** of Great Britain and Premier **Benito Mussolini** of Italy conferred in Rome.

12—The Spanish Insurgents captured **Falset**, 22 miles from **Tarragona**, in Catalanian drive.

Lincoln Ellsworth, explorer, claimed 80,000 square miles of Antarctic territory for the United States.

15—Spanish Insurgents captured **Tarragona** on the Mediterranean and **Tarrega** on the road to **Cervera**.

Chungking, provisional capital of China, was bombed by Japanese airmen.

16—Minor bombings, ascribed to the Irish Republican Army, occurred in various British cities.

20—Chancellor **Hitler** removed Dr. **Hjalmar Schacht**, president of the German Reichsbank, replacing him with Economics Minister **Walther Funk**.

21—Imperial Airways flying boat, *Cavalier*, enroute from Port Washington, L. I., to Bermuda, was forced down in the Atlantic. Three of its 13 passengers were drowned, the others remaining afloat with life preservers for 10 hours until rescued by a Standard Oil tank steamer.

24—Earthquakes in Chile took a toll of nearly 50,000 lives and caused a property loss of \$50,000,000.

26—Spanish Insurgents entered **Barcelona**.

27—The U.S. Senate passed the Deficiency Relief Bill, giving to the President (as did the House on January 13) \$150,000,000 less than he requested.

President **Roosevelt** stated that he had approved the purchase by France of an undesignated number of military airplanes in the United States.

FEBRUARY

3—President **Roosevelt** publicly denied press reports that he had said to the Senate Committee on Military Affairs that "America's frontier is on the Rhine."

6—President **Roosevelt's** nomination of **Floyd H. Roberts** to be a Federal judge in Virginia was rejected by the Senate, 72 to 9.

9—The island of **Minorca**, off the Mediterranean coast of Spain, was occupied by the Spanish Insurgents, after the removal of 450 Loyalist refugees on a British cruiser.

10—Pope **Pius XI**, 81, died in the Vatican.

Japanese troops occupied the Chinese island of **Hainan**, off French Indo-China.

13—The Mexican government expropriated 50,000 acres of land belonging to the U.S. Sugar Company and distributed them among native farmers.

Louis D. Brandeis, 82, associate justice of the U.S. Supreme Court, announced his retirement in a letter to President **Roosevelt**.

15—**Bela Imrédy**, Premier of Hungary and sponsor of anti-Semitic laws, resigned when it was disclosed that his mother's grandfather was born a Jew.

19—Soviet Russia and Poland signed a trade agreement at Moscow.

23—The U.S. House, 205 to 168, eliminated the island of Guam from the naval construction programme following statements in the Japanese press that fortification of the island would be deemed provocative.

25—James J. Hines, 63, a New York City Democratic (Tammany) District leader, was found guilty of conspiracy and with feloniously contriving a lottery with the late Arthur Fleigenheimer (Dutch Schultz). His sentence on March 23 of four to eight years was held in abeyance pending his appeal to the higher courts.

27—The U.S. Supreme Court declared the sit-down strike an illegal labor weapon.

Great Britain and France officially recognized the Insurgent regime as the legal government of Spain.

28—Manuel Azaña resigned as President of the Republic of Spain.

MARCH

2—Eugenio Cardinal Pacelli, Papal Secretary of State, was elected Pope by the Sacred College of Cardinals. He took the name of Pius XII.

8—The British Government extended a £5,000,000 credit to the Chinese Government to support the Chinese dollar.

10—Joseph Stalin at the all-Union Communist Party Congress, said the press of the United States, France and Great Britain "by creating noise over the Ukraine, are trying to arouse the fury of the Soviet Union against Germany to poison the atmosphere and provoke a conflict without any apparent cause."

The Rev. Joseph Tiso, Premier of Slovakia, was removed from office by President Emil Hacha of Czechoslovakia. On March 13 Tiso flew to Berlin and received from Chancellor Hitler a promise of military aid in Tiso's plan for an independent Slovak republic.

14—In Bratislava, the Parliament of Slovakia voted to sever all connection with Czechoslovakia and elected Tiso President and Premier of the new country. Following conference between President Hacha and Chancellor Hitler in Berlin, the Prague Government officially dissolved the Republic of Czechoslovakia.

Hungarian troops invaded the Carpatho-Ukraine.

15—German troops began occupancy of Bohemia and Moravia, meeting little resistance. Reich soldiers invested Prague and Chancellor Hitler, who had traveled from the Czech border by automobile, spent the night at Prague's historic Hradshin Castle.

16—Following an appeal from President Tiso, Chancellor Hitler in Prague proclaimed Slovakia a German protectorate.

Premier Paul Teleky of Hungary announced that Carpatho-Ukraine had become "a part of the Kingdom of Hungary."

17—The United States, Great Britain, France and Russia officially condemned Germany's annexation of Bohemia and Moravia.

18—Germany and Great Britain recalled their Ambassadors for consultation.

The United States announced the imposition of countervailing duties of 25 per cent on many German articles of export.

20—The United States and Germany recalled their Ambassadors.

24—In Powell, Wyoming, Earl Durand, 26, a hunter whom peace officers had sought to arrest for poaching, shot himself to death during a bank holdup in which he had been wounded. He had slain four constables in nine days.

27—Japanese troops occupied Nanchang.

The U.S. Supreme Court ruled that State employees are subject to Federal income taxation and that the incomes of Federal employees may be taxed by the States in which they reside.

28—Madrid capitulated to the Spanish Insurgents.

31—Prime Minister Chamberlain stated in the House of Commons that: "In the event of any action which clearly threatened Polish independence and which the Polish Government accordingly considered it vital to resist with their national forces, His Majesty's government would feel themselves bound at once to lend the Polish government all the support in their power."

Hungary and Slovakia settled their boundary dispute with a net gain of 10 villages and 800 square miles to Hungary.

Japan announced annexation of the Spratly Islands.

APRIL

1—The Franco Government in Spain was officially recognized by the United States and the embargo on munitions to Spain, effective since Jan. 8, 1937, was lifted.

3—The Soviet Government announced that it had not obligated itself to assist Poland with supplies in the event of a German-Polish war.

4—Feisal II, three years old, was proclaimed King of Iraq, succeeding his father, Ghazi I, 27, who was killed

in an automobile accident. Frenzied by the belief that the British had assassinated their monarch, a mob stormed the British Consulate in Mosul, 200 miles northwest of Baghdad, and killed the Consul, George E. Monck-Mason.

Foreign Minister Josef Beck of Poland and Prime Minister Chamberlain conferred in London on Great Britain's guarantee to Poland.

In France, Albert Lebrun was re-elected President by the National Assembly in Versailles.

Chancellor Hitler named Baron C. von Neurath civil administrator (Protector) of Bohemia and Moravia.

8—Italian troops invaded Albania and in a series of quick moves subjugated the country. Queen Geraldine, with her 3-day-old son, fled in a Red Cross ambulance to Greece, where she was joined the next day by King Zog.

Secretary of State Hull termed Italy's action "a forcible and violent invasion" and "an additional threat to the peace of the world."

10—After a talk with the British Minister to Greece, Premier John Metaxas declared the "Greek Government declares that it has all the requisite means to enable it to tell the Greek people that the independence and integrity of the country are absolutely assured."

13—Prime Minister Chamberlain announced in the House of Commons that the British guarantee to Poland, as stated on March 31, had been extended to Greece and Rumania.

15—Premier Mussolini and Chancellor Hitler received identical cablegrams from President Roosevelt asking them to pledge themselves not to go to war against certain specified countries for a period of ten years. In return, the President promised to call a world conference for disarmament and for increasing the accessibility of raw materials and products to all countries.

17—The U.S. Supreme Court ruled that past membership in the Communist Party was not a sufficient ground for deportation.

23—The British and French Ambassadors returned to their posts in Berlin.

The Franco Government in Spain ordered restored to King Alfonso XIII and his relatives all property of theirs confiscated by the Spanish Republic.

24—Lieut. Col. German Busch, President of Bolivia, dissolved the Congress, suspended the Constitution and all existing laws and established a political and financial dictatorship.

26—President Roosevelt signed the \$549,000,000 War Department Appropriation Bill.

27—The British House of Commons voted for compulsory military training in the United Kingdom as "necessary for the safety of the country and fulfillment of undertakings recently given to certain countries of Europe."

28—Chancellor Hitler, in a speech before the Reichstag, declared President Roosevelt's request for a non-aggression pledge unacceptable, but that Germany had no intention of attacking the United States or any other nation. He said Germany wanted back the territories lost in the World War, including Danzig, and a right of way across the Polish Corridor. He announced abrogation of Germany's non-aggression pact with Poland, the Anglo-German naval agreement and the Munich agreement with Great Britain.

MAY

3—In Soviet Russia, Maxim Litvinov, Commissar for Foreign Affairs since 1929, resigned and was succeeded by Vyacheslav M. Molotov, President of the Council of People's Commissars.

4—Japanese planes bombed Chungking, provisional capital of China, taking an estimated toll of 5000 lives.

5—Gen. Anastasio Somoza, President of Nicaragua, arrived in Washington on a visit of state.

Soft coal production was almost completely halted when the United Mine Workers and coal operators failed to reach an agreement on a new contract.

6—The Turkish Government announced a mutual assistance pact with Great Britain.

7—Italy announced an iron-clad political and military agreement with Germany, following conferences in Milan between their respective Foreign Ministers, Count Galeazzo Ciano and Joachim von Ribbentrop.

10—German proposals for non-aggression treaties were formally rejected by Finland, Norway, and Sweden on the ground that acceptance would compromise their neutrality.

11—Fighting began between Japanese-Manchoukuo and Mongol-Soviet troops on the Manchoukuo-Outer Mongolia border southeast of Lake Bor. Hostilities continued for several months.

13—Negotiators for miners and operators in the soft coal industry reached an agreement to accept a two-year contract with no wage or hour changes.

17—King George VI and Queen Elizabeth of Great Britain landed in Quebec from the steamship *Empress of Australia*.

Denmark accepted Germany's non-aggression pact proffer.

22—In Toronto, the Dionne quintuplets were received by Queen Elizabeth and King George in a special audience.

Germany and Italy signed a 10-year military alliance, which stated: "If contrary to the wishes and hopes of the contracting parties it should happen that either of them should become involved in military entanglements with one other power or with other powers, the other contracting party will immediately rally to his side as ally and support him with all his military resources on land, at sea and in the air."

Thomas J. Pendergast, 67, Democratic leader of Kansas City, Mo., pleaded guilty to income tax evasion and was sentenced to one year and three months in prison and fined \$10,000 in Kansas City Federal Court.

23—The U.S. submarine *Squalus* sank with 59 men aboard five miles southeast of the Isle of Shoals, off Portsmouth, N. H., with a loss of 26 lives; 33 men, including the commander, were saved on May 24 by means of a 10-ton "diving bell" steel rescue chamber.

25—Japanese airmen again bombed Chungking, provisional capital of China.

Grover Cleveland Bergdoll, World War draft dodger, returned to New York from Germany and was arrested by army officials on a desertion charge.

31—Foreign Commissar Molotov announced that Soviet Russia would not conclude mutual assistance-defensive pacts such as Great Britain had recently negotiated with Poland and Turkey unless the scope were widened to include Finland, Estonia, and Latvia.

JUNE

1—British submarine *Thetis* sank in Liverpool Bay. Only four of 103 men aboard were saved.

The U.S. House, by a vote of 302 to 97, turned down the Townsend Old-Age Pension Bill.

Ex-Judge Martin T. Manton of the U.S. Circuit Court of Appeals was found guilty in New York City of conspiracy to defraud by selling justice while on the bench. A sentence of two years in prison and a fine of \$10,000 were imposed on June 20.

5—The U.S. Supreme Court sustained an injunction granted by a lower court restraining Mayor Frank Hague and the Jersey City police from nullifying the constitutional right of free speech and assembly.

6—Supreme command of the French army, navy, and air force was vested in Gen. Marie Gustave Gamelin.

7—King George and Queen Elizabeth crossed the American border at Niagara Falls, N. Y., and were greeted by Secretary of State Cordell Hull and Mrs. Hull.

8—The British monarchs were met at the Union railway station in Washington, D. C., by President and Mrs. Roosevelt. The party motored to the White House where an official reception was held, followed by a state dinner in the evening.

14—The British concession at Tientsin, China, was blockaded by Japanese troops, following refusal of the British to surrender to the Japanese four Chinese fugitives accused of terrorism and assassination.

15—Responsibility for the Black Tom and Kingsland, N. J., explosions of 1916-17 was placed on the German Government by U.S. Supreme Court Justice Owen J. Roberts acting as umpire for the German-American Mixed Claims Commission.

22—King George and Queen Elizabeth reached England on the liner *Empress of Britain* on their return home from their visit to Canada and the United States.

23—France and Turkey signed a military alliance and treaty under which the Hatay Republic (Sanjak of Alexandretta), part of France's mandated territory of Syria, was ceded to Turkey.

26—Governor Richard Leche of Louisiana resigned and was succeeded by Earl Long, lieutenant-governor and brother of the late Huey Long.

29—The airplane *Dixie Clipper*, with 22 passengers and a crew of 11, arrived in Lisbon, Portugal, from Port Washington, N. Y., on the first commercial passenger flight of an airplane from the United States to Europe.

JULY

5—President Roosevelt's power to alter the gold content of the dollar and to affect foreign exchange rates by operation of the \$2,000,000,000 stabilization fund was extended to June 30, 1941, by the U.S. Senate.

7—Chungking, temporary capital of China, was bombed by Japanese airmen.

11—The Foreign Relations Committee of the U.S. Senate voted to postpone revision of the Neutrality Law to the "next session of Congress."

17—The proposed Battery-Brooklyn bridge over the East River at New York City was rejected by the U.S. War Department as a potential menace to naval navigation if bombed in wartime.

22—Great Britain and Japan signed an agreement by which the British recognized that the "Japanese forces

in China have special requirements for the purpose of safeguarding their own security and maintaining public order in the regions under their control."

25—A new treaty between the United States and Panama, superseding that of 1903, and granting the United States special war time rights in the Isthmus, was ratified by the U.S. Senate, 65 to 15.

26—The United States gave formal six-months notice to Japan of abrogation of its 1911 commercial treaty with that country.

AUGUST

2—Gov. R. L. Carr of Colorado called out national guard to restore order at strike-bound Green Mountain Dam.

5—First session of 76th U.S. Congress adjourned.

11—Nine soldiers, including two officers, were killed when U.S. Army bombing plane crashed near Langley Field, Va.

13—Passenger train bound for San Francisco from Chicago jumped the track at the Humboldt River Canyon, Nev., killing 23 and injuring 109 persons.

15—U.S. Government paid \$44,728,300 to the Commonwealth and Southern Corporation and took formal possession of the Tennessee Electric Power Company properties.

16—Japanese troops invaded territory adjoining Hong Kong.

Mayor Frank Hayes of Waterbury, Conn., and 19 other city employees, were found guilty of fraud. Hayes was sentenced to from 10 to 15 years.

18—Germany assumed military control of Slovakia.

19—Soviet Russia and Germany signed a far-reaching trade agreement.

21—A 10-year mutual non-aggression pact was concluded by Soviet Russia and Germany and formally signed on Aug. 24.

22—Great Britain announced that her obligations to Poland were unaffected by Russo-German trade and non-aggression pacts.

23—President Germán Busch of Bolivia shot himself to death.

24—In peace appeals to Germany, Poland, and Italy, President Roosevelt urged direct settlement, arbitration or conciliation of the Danzig-Polish Corridor dispute.

A law making Albert Forster "supreme head of . . . Danzig" was passed by the Danzig Senate.

26—Proposals and counter-proposals regarding Danzig and Poland were carried to and from London and Berlin by Sir Neville Henderson, British Ambassador to Berlin.

27—In a letter to Premier Daladier of France, Chancellor Hitler said the Polish Corridor "must return to Germany" and that "the Macedonian conditions on our eastern frontier must be removed."

29—Gen. Nobuyuki Abe succeeded Kiichiro Hiranuma as Premier of Japan.

30—Chancellor Hitler demanded immediate return of Danzig, a plebiscite in the Corridor, and free access of Germany to East Prussia, offering in return to guarantee the port of Gdynia to Poland.

German liner *Bremen* sailed from New York for an undisclosed destination.

SEPTEMBER

1—German troops invaded Poland in what was officially described as "counter-attack with pursuit." Warsaw, Cracow, Kattowitz, Gdynia, and Teschen were bombed from the air. Great Britain and France, in ultimatums, notified Berlin that unless German soldiers were recalled from Polish soil in 24 hours, Britain and France would go to war for Poland.

3—Prime Minister Neville Chamberlain told Parliament that Germany had ignored the British ultimatum and that consequently a state of war between Germany and Great Britain had begun at 11 a.m. September 3. France's ultimatum expired at 5 p.m. and war between France and Germany began automatically at that hour. Australia and New Zealand entered the war later the same day.

The British steamship *Athenia*, bound for Montreal, was sunk by a submarine 200 miles northwest of Ireland with a loss of 122 persons, including 29 Americans.

5—One German army came within 21 miles of Warsaw and shelled the city with long-range guns.

President Roosevelt—under the existing neutrality law—proclaimed an embargo on the shipment of arms, munitions, airplanes, and airplane parts to Germany, Poland, France, the United Kingdom, India, Australia, and New Zealand.

8—German soldiers occupied suburbs of Warsaw.

10—Canada declared war on Germany.

11—Warsaw was bombed 17 times by German airmen.

14—Gdynia surrendered to the Germans.

The Duke of Windsor had tea with his brother, King George VI, at Buckingham Palace, their first meeting since the abdication.

15—Soviet Russia and Japan agreed to an armistice on the Manchoukuo-Outer Mongolia border.

16—Soviet troops crossed the Polish frontier "to protect" Russian "interests and to protect the White Russian and Ukrainian minorities."

17—The British aircraft carrier *Courageous* was sunk by a German submarine.

President Ignace Moscicki and Foreign Minister Josef Beck and many other Polish officials, soldiers, and civilians fled to Cernauti, Rumania.

21—In Rumania, Premier Armand Calinescu was assassinated by members of the Iron Guard (Fascist) organization.

27—Warsaw surrendered to the German armies.

28—Soviet Russia and Germany signed a compact sealing "the disintegration of the Polish State" and dividing the country between them.

29—Estonia and Soviet Russia signed a mutual assistance pact giving the latter the right to establish army, naval, and air bases on Estonian soil.

OCTOBER

2—Pan-American Conference adopted a declaration enjoining belligerent nations from aerial or naval warfare within a "safety zone" extending roughly 300 miles from the ocean shore of all the American republics.

5—Soviet Russia and Latvia concluded a military pact which provided for Russian naval, aerial, and army bases on Latvian soil.

Grover C. Bergdoll, Philadelphia World War draft dodger, was court-martialed on Governors Island, found guilty and sentenced to three years in prison at hard labor.

9—The U.S. steamship *City of Flint* was seized in the Atlantic by the German battleship *Deutschland*. It was released to its American crew by the Norwegian Government (Oct. 20) at Haugesund where, under a German prize crew, it stopped en route from Murmansk to Hamburg.

Finnish delegation arrived in Moscow to negotiate military pact.

10—Soviet Russia and Lithuania signed a 15-year mutual assistance pact by which Vilna was restored to Lithuania and Russia was permitted to establish military bases on Lithuanian soil.

12—U.S. Ambassador Steinhardt, on instructions from President Roosevelt, appealed to Soviet Russia to be moderate in its demands on Finland.

14—British battleship *Royal Oak* was sunk by a German submarine.

16—Warren K. Billings, serving life term in 1916 San Francisco bombing case, freed by Governor Olson of California.

19—Turkey signed a 15-year military pact with France and Great Britain, pledging mutual assistance in the event of European aggression in the Mediterranean area, but specifically releasing Turkey from any obligation to go to war with Russia.

27—U.S. Senate repealed the arms embargo bill, 63 to 30.

NOVEMBER

2—U.S. House repealed arms embargo bill, 243 to 181.

4—President Roosevelt in two proclamations barred American shipping from the European "combat area" and barred foreign submarines from United States ports.

7—A joint offer to mediate the European war was issued by Queen Wilhelmina of the Netherlands and King Leopold of Belgium.

8—Chancellor Hitler narrowly escaped death when a time-bomb exploded in a Munich beer hall (killing eight persons), a few minutes after he had left.

13—Finnish delegates returned home after unsuccessful effort to reach an accord with Soviet Russia.

15—Serious riots broke out among Czech students and others in Prague, followed by wholesale arrests and executions by German troops.

16—Alphonse Capone was formally released from prison, after serving more than seven years for income tax evasion.

20—Magnetic mines were dropped by parachute from German airplanes into British waters.

22—City ordinances prohibiting door-to-door canvassing and the distribution of pamphlets in streets were found unconstitutional by the U.S. Supreme Court.

24—Japanese forces occupied the city of Nanning, in south China.

26—The Soviet Government charged that Finnish artillery killed four and injured nine Red soldiers on the Karelian Isthmus.

23—British armed merchant ship *Rawalpindi* was sunk in an engagement with the German battleship *Deutschland*.

28—Soviet Russia formally denounced its non-aggression pact with Finland.

29—Soviet Russia severed diplomatic relations with Finland and mobilized troops on the Finnish border.

30—Soviet Russia launched a four-pronged military

assault on Finland. Red airplanes bombed many Finnish cities, including Helsinki, where 200 persons were reported killed.

President Roosevelt in identical notes appealed to Finland and Russia to refrain from bombing unfortified cities.

DECEMBER

1—A "People's Government of Finland," reportedly established by Finnish Communists at Terijoki, Finland, was officially recognized by Soviet Russia.

Helsinki was bombed three times by Soviet airmen.

2—Petsamo was occupied by Soviet forces, retaken by Finnish troops, and recaptured by the Red Army in fierce fighting.

President Roosevelt asked American aircraft firms not to export planes or aeronautical equipment to nations guilty of "bombing and machine-gunning civilian populations."

King George VI of Great Britain landed in France for an inspection of his troops.

Great Britain and France officially instituted their two-way blockade of Germany.

Fritz Kuhn, German-American Bund leader, was sentenced to two and a half to five years for larceny and forgery.

7—The Fascist Grand Council reaffirmed the Rome-Berlin Axis, but warned Russia to keep hands off the Balkans.

8—The United States protested Great Britain's blockade of German exports.

The United States Government extended credits of \$10,000,000 to Finland for the purchase of "civilian supplies" in this country.

11—U.S. Supreme Court ruled that evidence obtained by wire-tapping is inadmissible in Federal courts.

The League of Nations sent a telegram to Soviet Russia requesting that hostilities be ended and the Finnish-Russian dispute submitted to the League for arbitration.

12—Soviet Russia informed the League of Nations that Finland and Russia were not at war.

The German liner *Bremen* arrived at a German seaport after a dash from Murmansk, Russia.

A Franco-British economic agreement fixed the parity rate between the franc and the pound sterling at 176 francs to the pound, and eliminated transfers of gold between the two countries.

Russian steamer *Indigirka* sank in a lonely strait between the islands of Sakhalin and Hokkaido (Japan), carrying more than 700 fishermen and their wives to their deaths. About 400 were rescued.

13—After an 18-hour battle with three British light cruisers—the *Exeter*, *Ajax*, and *Achilles*—the German pocket battleship *Admiral Graf Spee* took refuge in Montevideo harbor, Uruguay, with 36 dead and 60 wounded. British casualties were 72 killed—61 of them on board the *Exeter*—and 31 wounded.

14—The League of Nations declared that Soviet Russia had "placed itself outside the League of Nations."

Soviet troops occupied Salmijaervi, Finnish nickel-mining center.

First major air battle of the Anglo-German war was fought over Helgoland naval base.

15—Finland paid its semi-annual debt installment of \$234,693 to the United States.

The Communist party in the United States lifted its boycott of German goods.

The Finnish army claimed the recapture of Suomussalmi.

16—Vice-president John Nance Garner, at Uvalde, Texas, announced his candidacy for the Presidency.

17—The pocket battleship *Admiral Graf Spee* was blown up and sunk by her crew at the mouth of the River Plate, near Montevideo.

18—The first contingent of Canadian troops arrived in England.

British bombers engaged German pursuit planes over Helgoland Bight in major air battle.

A British submarine destroyed one German cruiser, crippled two others and sank a U-boat, according to the Admiralty in London.

Officers and crew of the sunken *Admiral Graf Spee* were interned in Buenos Aires.

19—The German liner *Columbus* was scuttled by her crew when intercepted by a British cruiser 450 miles east of Cape May, N. J. The U.S.S. *Tuscaloosa* picked up 577 survivors. Two members of the crew were reported missing.

The German freighter *Arauca* was chased into Fort Lauderdale harbor, Florida, by the British cruiser *Orion*.

Russian airmen bombed five Finnish cities—Helsinki, Abo, Borga, Viborg, and Hangoe.

20—In Buenos Aires, Capt. Hans Langsdorff, commander of the sunken battleship *Admiral Graf Spee*, shot himself to death.

21—Col. F. C. Harrington, WPA administrator, an-

nounced that on Dec. 13, 1939, there were 2,122,960 persons obtaining Federal relief as compared with 3,184,927 on Dec. 14, 1938.

22—Collision of two railway trains in Germany took 132 lives, bringing to 238 the number of persons killed in train accidents in Germany since the war began.

23—The United States and the 20 other American republics jointly protested to Great Britain, France, and Germany against naval warfare in the safety zone proclaimed by the Panama Inter-American Conference.

President Roosevelt appointed Myron C. Taylor as his personal Ambassador, without portfolio, to the Vatican.

24—Pope Pius XII outlined five conditions essential to "a just and honorable peace" as follows—a guarantee of independence to all nations, general disarmament, the creation or reshaping of international bodies to assure faithful observance of international undertakings, the fulfillment of "the true needs" of nations and ethnic minorities, and abandonment of all hatreds for "moral justice" in keeping with Christian ideals.

27—Earthquake in Eastern and Northern Anatolia, Turkey, took a toll of 30,000 to 50,000 lives and caused widespread property damage.

Great Britain announced that the United Kingdom and Sweden had signed a war-time trade agreement.

28—Pope Pius XII made a visit of state to the King and Queen of Italy at the Quirinal Palace; repaying a like visit of the Italian rulers to the Vatican.

31—Near Lake Kianta, the Finns inflicted a crushing defeat on the 163d Russian Division, consisting of some 18,000 men, who were cut off from the main Soviet army and virtually annihilated.

CHRYSLER STRIKE. See LABOR CONDITIONS.

CHURCHES. See RELIGIOUS ORGANIZATIONS.

CHURCH OF CHRIST, SCIENTIST. See CHRISTIAN SCIENCE; RELIGIOUS ORGANIZATIONS.

CHURCH OF ENGLAND. See ENGLAND, CHURCH OF.

CHURCH OF GOD. See RELIGIOUS ORGANIZATIONS.

CHUVASH AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

CIGARS, CIGARETTES. See TOBACCO.

CINCINNATI. See OHIO.

CINCINNATI, UNIVERSITY OF. An institution for the higher education of men and women in Cincinnati, Ohio, founded in 1870. The enrollment for the autumn of 1939 was 10,570, and for the summer session, 1084. There were 689 members on the faculty. The endowment funds for the year amounted to \$9,629,874; the income for the same period was \$349,300. The library contained 480,367 volumes. A \$500,000 addition to the chemistry building was made. President Raymond Walters, Litt.D., LL.D. See ARCHAEOLOGY.

C.I.O. Congress of Industrial Organizations (q.v.).

CIRENAICA. See LIBYA.

CITY OF FLINT. See NEUTRALITY; UNITED STATES under *Foreign Affairs*.

CITY PLANNING. See PLANNING.

CIVIC FEDERATION, THE NATIONAL. This movement was organized in 1900 to seek the solution of some of the great problems related to social and industrial progress. It provided especially for the discussion of questions of national import, aided in the crystallization of an enlightened public opinion, and promoted legislation when desirable.

During 1939 the Federation initiated a campaign to rally public opinion in opposition to burdensome taxation in the securities field, believing that the resumption of prosperity was not possible until certain obstacles were removed from the channels through which private funds flow into economic structure.

Also, the Federation created a Religious Recovery Division, designed to stimulate church attendance and support by enlisting the aid of

business. The underlying purpose was to preserve Americanism and discourage the spread of subversive movements. The first step in this direction was the publication before Christmas of full-page advertisements in papers throughout the country.

The founder and chairman of the Executive Council of the Federation, Ralph M. Easley, died on Sept. 7, 1939. He was succeeded by Mack W. Becks. The headquarters are at 45 East 34th Street, New York City.

CIVIL AERONAUTICS AUTHORITY. See AERONAUTICS.

CIVIL ENGINEERS, AMERICAN SOCIETY OF. An association of professional engineers, founded in 1852 to advance engineering and architectural knowledge and practice, to maintain high professional standards, and to encourage intercourse among men of practical science.

The membership as of Dec. 26, 1939, was 16,065. There were 63 local sections and 120 affiliated student chapters in colleges and universities throughout the United States.

The Spring Meeting of the Society was held in Chattanooga, Tenn., April 19-22, and included a discussion of the construction program and activities of the Tennessee Valley Authority, and inspection trips to power plants and points of scenic interest in Tennessee and North Carolina. The 69th Annual Convention took place in San Francisco, July 26-28, during the Golden Gate International Exposition. At all of these meetings, sessions were also held by several of the Technical Divisions, presenting papers in their own specific fields.

The Society publishes two monthly magazines: *Civil Engineering*, which presents news of society affairs and articles of more popular appeal; and *Proceedings*, which contains technical papers that are later collated, with discussions, in the yearly volume of *Transactions*.

At the Annual Meeting, held in New York City, Jan. 18-21, 1939, there were awarded medals and prizes for papers published in the "Transactions" for 1937. These included the Norman Medal to Hunter Rouse, the J. James R. Croes Medal to E. C. Hartmann, the James Laurie Prize to Leon S. Moisseiff, the Arthur M. Wellington Prize to Charles M. Noble, and the Collingwood Prize for Juniors to Douglas M. Stewart.

The officers of the society in 1939 were: President, Donald H. Sawyer; vice-presidents, E. N. Noyes, Malcolm Pirnie, Charles M. Reppert, James L. Ferebee; secretary, George T. Seabury; treasurer, Otis E. Hovey. Headquarters are in the Engineering Societies Building, 33 West Thirty-ninth Street, New York City.

CIVILIAN CONSERVATION CORPS. The Civilian Conservation Corps was established in April, 1933, to furnish employment, as well as vocational training for youthful citizens of the United States who are unemployed and in need of employment, and to a limited extent for war veterans and Indians, through the performance of useful public work in connection with the conservation and development of the natural resources of the continental United States, Alaska, Hawaii, the Virgin Islands, and Puerto Rico.

The CCC was created by Act of Congress approved June 28, 1937, succeeding the emergency agency known as the Emergency Conservation Work which was established by Executive Order 6101 dated April 5, 1933, under the Act of March 31, 1933 (Public No. 5, 73rd Congress). The 1937

Act (Public No. 163, 75th Congress) which established the Civilian Conservation Corps, also extended its period of operation until July 1, 1940. This Act was amended Aug. 7, 1939, providing for the continuation of the Corps through June 30, 1943.

The CCC operated as an independent government agency from April, 1933, through June 30, 1939. On July 1, 1939, it became a part of the Federal Security Agency created by the President under the Reorganization Act of 1939. Robert Fechner, appointed as Director of the CCC upon its establishment, headed the organization until his death Dec. 31, 1939. James J. McEntee, Executive Assistant to the Director since the CCC began operations, is now Acting Director.

The Corps operates a chain of 1500 outdoor camps for young men and war veterans throughout the continental United States, and approximately 100 smaller camps on Indian reservations and in the territories and insular possessions. By legislation, the enrolled strength of the Corps is limited to a maximum of 270,000 junior enrollees, 30,000 war veterans, 10,000 Indians, and 5000 territorials.

The CCC program is headed by a Director, appointed by the President, by and with the advice and consent of the Senate, who is charged with complete and final authority in the functioning of the Corps. He is assisted by three co-operating government departments—War, Interior, and Agriculture—the Veterans Administration and a large group of State welfare and conservation agencies.

The general program and objectives of the CCC have continued unchanged since its establishment. Each year the Corps has offered an opportunity for security, gainful employment, academic, vocational, and job training to hundreds of thousands of idle young men. Each year has seen great progress made in the conservation work programs carried out on the nation's forests, parks, and farm lands. Some 150 major types of work have been and are being carried out from CCC camps in furtherance of this program. By planting trees over hundreds of thousands of acres of wastelands, by demonstrating proper measures for soil erosion control on farms, by strengthening the forest and park protection systems against forest fires and attacks of insects and tree diseases, by developing our parks and forests for recreational use, by conserving wildlife and carrying on many flood control, range rehabilitation, draining, reclamation, and other conservation projects, the CCC work programs have already added greatly to the nation's present wealth and future natural resources.

During the fiscal year 1939 (July 1, 1938–June 30, 1939) the principal results of the Civilian Conservation Corps program were as follows:

Employment furnished to an aggregate of 582,000 persons, of whom approximately 536,920 were enrolled men. Of the enrolled group, 473,832 were young men between the ages of 17 and 23 years, and 5420 were Project Assistants (age exempted); 39,168 were war veterans; 12,000 were Indians, and 6500 were Territorials. Enrollees join the Corps for a six-month period, and may re-enroll for succeeding six-month periods up to a total of two years, providing they fulfill requirements and have a satisfactory record.

More than \$72,285,000 was sent home to needy dependents by CCC enrollees during the fiscal year 1939. (Enrollees are paid a basic cash

allowance of \$30 a month of which a minimum of \$22 is required to be allotted to dependents.)

Expenditures of the Civilian Conservation Corps for the fiscal year 1939 totaled \$284,827,774.

An average of 249,768 young men per month or 91.3 per cent of the average strength received educational and practical work training. During the fiscal year 1939, more than 8936 illiterates were taught to read and write. During this period more than 31,000 enrollees left the camps to accept jobs in private industry prior to completing their terms of enrollment.

Diplomas issued to CCC enrollees were as follows: 5176 for completion of the eighth grade; 1048 for completion of high school courses; 97 for completion of college courses. CCC enrollees were awarded 763 college scholarships in 189 educational institutions. Enrollee participation in the CCC camp educational and vocational training program is as follows:

	%		%
Academic	37	Informal	13
Vocational	47	Professional	16
Job Training	65	First Aid, Life Saving, etc.	59

A brief summary of conservation work accomplished by CCC enrollees during the fiscal year 1939 is given in the following table:

Tree planting (forest trees)	267,162,400 (Number)
Forest stand improvement	290,272 (Acres)
Tree disease and insect pest control work	1,346,426 (Acres)
Construction truck trails and minor roads	8,368 (Miles)
Building of telephone lines	7,429 (Miles)
Reduction of fire hazards	97,783 (Acres)
Erection fire lookout and observation towers	241 (Number)
Forest fire fighting and fire prevention and fire suppression work	1,443,391 (Man-days)
Construction of check dams	756,869 (Number)
Gully Control Work:	
Seeding and sodding	37,877,052 (Sq. Yds.)
Tree Planting	20,351,000 (Number)
Terrace construction	4,240 (Miles)
Terrace channel construction	7,271,883 (Linear Ft.)
Construction of impounding and large diversion dams	588 (Number)
Construction of stock driveways	555 (Miles)
Building springs, waterholes, and small reservoirs	2,092 (Number)
Development fish rearing ponds	165 (Number)
Planting fingerlings in lakes, ponds, streams	145,613,606 (Number)

J. J. McENTEE.

CIVILIAN PILOT TRAINING PROGRAM. See AERONAUTICS.

CIVIL LIBERTIES UNION, AMERICAN. An organization incorporated under the laws of New York in 1920. It fights for freedom of speech, press and assemblage wherever these constitutional rights are violated anywhere in the United States. It deals also with other guarantees of personal liberty in the Bill of Rights, and with academic freedom, censorship, and race discrimination.

It has over 5000 members and contributors, and is managed by a Board of Directors which acts under the ultimate control of policies by a National Committee numbering about 70 throughout the country. *The Civil Liberties Quarterly* is sent free to members of the Union.

During 1939, the Union interested itself in conditions in Jersey City, N. J. (see New Jersey), the right of assembly, the rights of communists, the rights of the German-American Nazis, censorship, political prisoners, etc.

The officers of the Union were Dr. Harry F. Ward, chairman and chairman of the Board of Directors, the Rt. Rev. Edward L. Parsons, Dr. Mary E. Woolley, and Lloyd K. Garrison, vice-chairmen; B. W. Huebsch, treasurer; Roger N. Baldwin, director; Lucille B. Milner, secretary. Headquarters are at 31 Union Square, West, New York City.

CIVIL SERVICE COMMISSION, U.S.

As the central personnel agency for the Federal Government, the U.S. Civil Service Commission administers the Civil Service Act of Jan. 16, 1883, the Classification Act of Mar. 4, 1923, as amended, the Civil Service Retirement Act of May 22, 1920, as amended, the Canal Zone Retirement Act of Mar. 2, 1931, as amended, and the Alaska Railroad Retirement Act of June 29, 1936, as amended.

The Civil Service Act and the civil-service rules promulgated by the President of the United States under authority of the Civil Service Act and of the act of Mar. 3, 1871, apply to the classified civil service of the executive branch, and, in some provisions, to the unclassified service. In December, 1939, the classified service included 660,594 positions, or 70.85 per cent of the 932,305 positions in the executive civil service on that date. See *GEORGIA*, NEW YORK.

There were 760,036 men and 172,269 women in the executive civil service in December, 1939. In the departmental service (central offices at Washington, D. C.) 39.3 per cent of the employees were women. In the field service 15.2 per cent of the employees were women; this relatively small proportion is caused by the large number of men employed in the Postal Service and in the navy yards, arsenals, and other manufacturing and construction projects.

Civil-Service Examinations. During the past fiscal year, 1,196,042 applications for civil-service examinations were received. Ratings were completed and eligible registers established in examinations for which 651,939 persons applied. Of these 566,361 took the examinations, and 261,586 received eligible ratings. The various Federal departments and establishments appointed 52,206 persons from civil-service registers.

Under the act of July 11, 1919, as interpreted by various Executive orders and court decisions, veteran preference is granted all persons discharged under honorable conditions at any time from the Army, Navy, Marine Corps, or Coast Guard.

During the fiscal year 1939, 123,806 persons applied for veteran preference in examinations. Of those who passed civil-service examinations, 31,463 had been granted veteran preference. Of the appointees to the classified service during the fiscal year, 21.89 per cent had veteran preference, including 10,933 men and 25 women receiving preference because of their own service, 381 widows of veterans, and 89 wives of disabled veterans.

Recent Legislation and Executive Orders.

On June 24, 1938, President Roosevelt issued Executive Orders Nos. 7915 and 7916, which became effective Feb. 1, 1939. Executive Order No. 7915 promulgated revised civil-service rules. Executive Order No. 7916 extended the classified service to unclassified positions not excepted by statute, required Divisions of Personnel Management to be established in the 10 executive departments and in 13 of the larger independent establishments, and authorized in-service training and competitive promotion examinations under the

supervision and co-ordination of the Civil Service Commission.

An appropriations act, Public Resolution No. 1 of Feb. 4, 1939, reduced to approximately 22,000 the number of positions included in the classified service by Executive Order No. 7916, by the withdrawal of positions financed from emergency relief funds.

On Jan. 31, 1939, the President issued revised Schedules A and B of the civil-service rules. These schedules are lists of positions excepted from examination or from competitive examination and their revision was provided for in Executive Order No. 7916. Decisions on the status of about 5000 professional, scientific, administrative, and technical positions, including many attorney positions, was temporarily postponed and the President's Committee on Civil Service Improvement was appointed to study this question. Chairman of the committee is Supreme Court Justice Stanley F. Reed.

Under the Ramspeck-O'Mahoney Act of June 25, 1938, postmasters of the first-, second-, and third-classes will be appointed without term, at the expiration of the terms of the present incumbents, in the classified service by the President by and with the advice and consent of the Senate. At the close of the session of Congress on Aug. 5, 1939, appointments to about 26 per cent of these 14,886 postmasterships had been made under the terms of this act.

The Civil Service Retirement Act was amended by Public, No. 263, of Aug. 4, 1939, effective Jan. 1, 1940. About 29,000 classified postmasters were included within the provisions of the Retirement Act, increasing the number of persons covered by the act to about 645,000. As other postmasterships are filled under provisions of the Ramspeck-O'Mahoney Act the incumbents will also be included within the scope of this Retirement Act.

HARRY B. MITCHELL.

CIVIL SERVICE REFORM LEAGUE, NATIONAL. Organized in 1881 under the leadership of George William Curtis, Dorman B. Eaton, Carl Schurz, Everett P. Wheeler, Charles J. Bonaparte, and others for the purpose of eliminating the spoils system of making appointments to public office, and for the establishment of a career system in the public service.

During 1939 the League successfully worked for passage of legislation banning political activity on the part of Federal employees; and for institution of the requirement that States sharing in Federal funds under the Social Security Act include observance of the merit system in selection of personnel in their plans of operation. A nation-wide Committee of Lawyers was organized, to arouse interest of the Bar in extension of the merit system. In co-operation with the National Municipal League (q.v.), the League drafted a model State civil service law.

Good Government is the League's official publication. The officers in 1939 were: Robert L. Johnson, president; W. W. Montgomery, Jr., chairman of the executive committee; Nicholas Kelley, chairman of the national council; Ogden H. Hammond, treasurer, and H. Eliot Kaplan, executive secretary. Headquarters: 521 Fifth Avenue, New York City.

CIVITAN INTERNATIONAL. An organization composed of selected professional and business men throughout the United States and

Canada, who have dedicated themselves to unselfish service to their city, county, State, and Nation. Its three major objectives are the "Building of Good Citizenship," "Curbing of Crime," and "Elimination of Tuberculosis." The first Civitan Club was founded in Birmingham, Ala., in 1917, the name being formed from the Latin "civitas." A total of 355 clubs had been chartered by Dec. 1, 1939.

The 1939 Convention was held in Hollywood, Calif., July 13-19. The official organ is *The Civitan* (monthly). The officers for 1939-40 were: President, Dr. J. L. Brakefield, Birmingham, Ala.; Vice presidents, Judge Allen May, St. Louis, Mo., Don Rogers, Chicago, Ill., and Fred Bauckham, Toronto, Canada; International Secretary, Arthur Cundy, Birmingham, Ala.; and International Treasurer, H. Z. Hopkins, Atlanta, Ga. Headquarters were at 800 Farley Building, Birmingham, Ala.

CLARK UNIVERSITY. A nonsectarian university in Worcester, Mass., founded in 1887. The registration for the autumn of 1939 was 418. The enrollment for the summer session was 183. There were 40 members on the faculty. The productive funds amounted to approximately \$5,000,000. The library contained 160,000 volumes. During 1939 an auditorium and an addition to the library were completed at a cost of \$250,000. President, Wallace W. Atwood, Ph.D.

CLEVELAND. See OHIO; SEWERAGE AND SEWAGE PURIFICATION.

CLOTHING. See LIVING COSTS AND STANDARDS; FASHION; GARMENT INDUSTRY; SHOE INDUSTRY.

COAL AND COKE. United States production of bituminous coal, anthracite, and bee-hive coke in 1939 are shown in Table I, with comparisons for 1938 and 1929.

TABLE I

	1939 (short tons)	1938 (short tons)	1929 (short tons)
Bituminous ¹	389,025,000	344,630,000	534,989,000
Anthracite ¹	50,807,000	46,099,000	73,828,000
Bee-hive coke ²	1,394,000	837,000	6,472,000

¹ Bituminous Coal Division, Dept. of Interior

² Bureau of Mines, Dept. of Interior

The coal industry in the United States staged a healthy recovery in 1939 of about 13 per cent in bituminous coal production, and 10 per cent in anthracite, compared with 1938. Bee-hive coke production, however, rose 67 per cent, reflecting increased activity in the iron and steel industry. In no case did the figures closely approach the records of 1929. The European war had little direct effect on the domestic industry. See BUSINESS REVIEW; KENTUCKY; LABOR CONDITIONS.

Stocks of bituminous coal in the hands of industrial consumers on Dec. 1, 1939, were 37,384,000 tons, an increase of 9 per cent over the preceding month and 12 per cent above the corresponding date in 1938. At the prevailing rate of consumption, industrial users held on December 1 enough bituminous coal to last 37 days.

A marked feature of soft coal mining in the United States is the rapid adoption of mechanical loading underground. According to a WPA research report issued by Commissioner F. C. Harrington, mechanical loading can displace from 10 to 40 per cent of the labor used in hand loading. It is estimated that within another decade as much as one-half of the country's soft coal

mined will be loaded underground by machine. Employment in the soft coal industry reached a peak of 705,000 in 1923, declined to a low point of 406,000 in 1932, and rose gradually to 492,000 in 1937. The industry employs as many workers as all other mineral industries combined.

British Empire output of coal remains nearly constant at 300,000,000 tons per annum, more than three-fourths of which is produced in the United Kingdom, and 90 per cent of the remainder in India, South Africa, Canada, and Australia.

H. C. PARMELEE.

COAST GUARD. The activities of the United States Coast Guard, dealing with the saving of life and property during the year ended June 30, 1939, may be summarized by stating that there were 9383 instances of lives saved and vessels assisted, this being 658 more instances than during the previous year; the total value of the vessels assisted, including cargoes, was \$63,723,566, and the number of persons on board the vessels assisted was 32,645. There were 10,615 instances of lives being saved or persons being rescued from peril, and an additional 4858 instances where assistance of one form or another was rendered.

In carrying out its functions as the Federal maritime police agency and its duties of law enforcement, the Coast Guard boarded and examined the papers of 32,655 vessels, and it seized 6 vessels. The fines and penalties incurred by vessels reported amounted to \$470,081. Coast Guard vessels removed or destroyed 266 derelicts; they patrolled 443 marine parades and regattas; and Coast Guard officers examined 3495 persons for certificates as lifeboat men.

In the hurricane which struck the New England coast in September, 1938, the Coast Guard rendered assistance with all equipment available, rescuing 1011 persons from positions of peril, and aiding 509 vessels. Emergency radio communication was provided, mail was transported, vessels and automobiles were recovered, and aerial surveys made. Three members of the Service lost their lives incident to rescue activities.

The Coast Guard provided an armed detail for the guarding and supervision of the transfer of approximately 77 million pounds of silver bullion by the Treasury Department from New York City to the depository at West Point, N. Y. Coast Guard cutters maintained the International Ice Patrol on the North Atlantic during the iceberg season, a duty to which they have been assigned since 1913, and while on this duty co-operated with the Weather Bureau in the study of the upper air conditions as a means of promoting greater safety in air navigation.

Under President Roosevelt's Reorganization Plan No. II, the Lighthouse Service, of the Department of Commerce, was transferred to and consolidated with the United States Coast Guard, in the Treasury Department. This consolidation, made in the interests of efficiency and economy, resulted in the transfer of the system of approximately 30,000 aids to marine navigation, including lighthouses, lightships, radiobeacons, fog signals, buoys, and beacons. These aids are maintained upon the sea and lake coasts of the United States, on the navigable rivers of the country, and upon the coasts of all other territory under the jurisdiction of the United States with the exception of the Philippine Islands and the Panama Canal proper. Plans were in progress at the close of the fiscal year providing for a complete

integration with the Coast Guard of the personnel of the Lighthouse Service, numbering about 5200.

The present national emergency has resulted in arduous duties incident to the maintenance of a strict neutrality patrol devolving upon the Coast Guard. To effectively carry out these additional duties Congress authorized the expansion of the enlisted strength of the Coast Guard, and the bringing of all units up to full strength. To provide for the eventuality of a continuing emergency, the number of cadets under training at the Coast Guard Academy at New London, Conn., for eventual commissioning as officers, was also increased. The establishment of a neutrality patrol necessitated a general reassignment of vessels, and certain shifts in personnel.

RUSSEL R. WAESCHE.

COCHIN CHINA. See FRENCH INDO-CHINA.

COCOS (OR KEELING) ISLANDS. See STRAITS SETTLEMENTS.

COFFEE. The 1938-39 coffee season in the principal producing countries, according to the International Institute of Agriculture, was characterized by weather conditions rather unfavorable to the crop and in some important areas by diseases, reducing the volume of production. The 1938-39 crop was estimated at 5011 million lb., the smallest in years except for the very low of 1935-36, and 465 million lb., below 1937-38. Brazilian production in 1938-39 approximated 3086 million lb. from 8,155,000 acres versus 3413 million lb. from 8,409,000 acres in 1937-38. The crop in other American countries was for Colombia 562 million lb., Salvador 132 million lb., Guatemala 119 million, Mexico 82 million, Cuba 68 million, and Venezuela 66 million lb.; and the total for American countries was estimated at 4314 million lb. The crop in Netherlands Indies, the leading non-American producer, was about 229 million lb.

The 1939-40 crop of Brazil, as reported by the New York Coffee and Sugar Exchange, would total about 21,861,000 bags versus 21,873,000 bags in 1938-39; the respective world totals in these years were 32,361,000 and 32,017,000 bags. The world visible supply in December, 1939, amounted to 8,162,812 bags. In Brazil, 8,628,749 bags had been pledged against the 1939-40 coffee loan, and coffee destroyed from July 1, 1938, to Dec. 15, 1939, totaled 6,207,000 bags. The total destroyed to Dec. 31, 1939, amounted to 68,253,000 bags, not including 479,000 bags destroyed before June 1931 by São Paulo Institute. Receipts at ports from interior Brazil were 17,102,000 bags in 1938-39. Exports from Brazil totaled 16,840,000 bags, and from Colombia 4,094,388 bags. Deliveries in the United States amounted to 13,817,107 bags in 1938-39, and in Europe 11,598,000, and the total world delivery 26,727,100 bags. New York spot prices (January-December) in 1939 averaged from 6 to 7¼¢ per lb. for Santos No. 4 and 8¼ to 12½¢ for Colombian.

HENRY M. STEECE.

COFFERDAMS. See FOUNDATIONS.

COINS. See CURRENCIES, VALUE OF FOREIGN.

COKE. See COAL AND COKE.

COLBY COLLEGE. A nonsectarian college for men and women at Waterville, Me., founded in 1813. The enrollment for the autumn term of 1939 was 682. The faculty numbered 53. The endowment amounted to \$2,765,705. Total income was \$569,294, of which \$117,264 was from interest on

investment, \$270,000 from student fees and sundry, and \$182,030 from gifts. The library contained 96,000 volumes. President, Franklin W. Johnson, L.H.D., LL.D.

COLCHICINE. See BOTANY.

COLGATE UNIVERSITY. A nonsectarian institution for the higher education of men in Hamilton, N. Y., founded in 1819. In the autumn of 1939, there were 1094 students enrolled. The faculty numbered 107 members. The productive funds amounted to approximately \$6,555,000, and the income for the year \$732,000. The library contained 110,000 volumes. President, George Barton Cutten, Ph.D., LL.D., D.D., Pd.D., L.H.D.

COLLECTIVE BARGAINING. See LABOR CONDITIONS; NATIONAL LABOR RELATIONS BOARD.

COLLEGES. See UNIVERSITIES AND COLLEGES; BENEFACTIONS; EDUCATION; ROCKEFELLER FOUNDATION; and the separate articles on the various institutions such as COLUMBIA UNIVERSITY, HARVARD UNIVERSITY, ETC.

COLLIER, BARRON. An American capitalist, died in New York, Mar. 13, 1939. Born in Memphis, Tenn., Mar. 23, 1873, he attended the public schools there, and got a job with an advertising firm at the age of seventeen. Ten years later (1900) he left for New York where he established Barron G. Collier, Inc., an advertising firm which subsequently controlled advertising in the New York subway, elevated, and surface lines. Successful, he branched out into other fields and accumulated a fortune through realty, banking, and contracting. At his death he was president or director of a score of companies, including Broadway Surface Advertising Corporation, Street Railways Advertising Co., etc.

Active in civic affairs, particularly in police work, Mr. Collier was a special deputy police commissioner in charge of the Bureau of Public Safety, New York (1922-25) and was interested in the work of the International World Police and the International Association of Chiefs of Police. He served as acting director of the Boy Scout Foundation of Greater New York during 1932-37. Mr. Collier established a residence in Florida and his large real estate holdings there led him to develop the West Coast of that State. He organized the Florida Gulf Coast Hotels, Inc., and Collier Florida Coast Hotels, Inc.

COLOMBIA. A South American republic, third in area and population among the states of that continent. Capital, Bogotá.

Area and Population. Area, about 448,794 square miles; population at the census of July 5, 1938, 8,724,839 (7,851,000 at 1928 census). There were 27,437 foreigners in January, 1939, of whom 16.6 per cent were Venezuelans, 13.3 per cent Germans, 8.3 per cent Spaniards, and 7.7 per cent United States citizens. Living births registered in 1938 numbered 277,800 (31.8 per 1000); deaths, 150,268 (17.2); marriages, 42,605 (4.9). The 1938 census populations of the chief cities were: Bogotá, 331,400; Medellín, 170,622; Barranquilla, 152,348; Cali, 110,579; Manizales, 86,346; Cartagena, 86,197; Ibagué, 61,860; Cúcuta, 57,251.

Defense. Military service is compulsory, the conscripts being called to the colors for one year at the age of 21 and then serving in the reserve until 30. The army's peace strength is about 10,000 men; war strength, about 50,000. Defense equipment includes about 15 airplanes, 2 modern destroyers, 1 seagoing gunboat, 3 coastguard patrol vessels, and 4 river gunboats. See *History*.

Education and Religion. In 1939 there were nearly 9200 primary schools, with over 600,000 pupils; 376 secondary, 25 vocational and 11 commercial schools; one national and three regional universities and six additional institutes offering courses of university grades. Students in all secondary schools and universities numbered 73,000. Primary education was available to only about one-third of the children of school age. The great majority of Colombians belong to the Roman Catholic Church, which was disestablished as the state church in 1936.

Production. The production of raw materials and foodstuffs for export is the basis of the national economy. Coffee, petroleum, gold, and bananas accounted for 94.2 per cent of the 1938 exports. Colombia is the world's chief source of mild coffee and ranks second to Brazil in total production. Estimated yields of the chief crops were (in metric tons): Coffee, 255,000 in 1938-39; cacao, 11,400 in 1937-38; cane sugar, 51,000 in 1938-39; tobacco, 14,800 in 1937-38; rice, 74,600 in 1936-37; wheat, 90,800 in 1937-38; corn, 490,500 in 1937-38. Livestock (1937): 9,167,455 cattle, 1,018,267 horses, 1,865,185 swine, 913,993 sheep, 815,923 mules and asses. Mineral production in 1938 included: Petroleum, 21,576,016 bbl.; gold, 520,698 fine oz.; salt, 78,000 metric tons; silver, 6 metric tons; platinum, 25,486 fine oz. (10 months). Manufacturing is confined largely to fabrication for local consumption (chiefly textiles, flour, cigars, and cigarettes) and oil refining.

Foreign Trade. Imports in 1938 totaled 159,259,000 pesos (169,684,000 in 1937); exports, 168,637,000 (184,187,000). Values of the chief 1938 exports (in pesos): Coffee, 94,160,000; petroleum, 37,206,000; gold, 18,780,402; bananas, 8,684,000; cattle hides, 3,876,000. The United States supplied 49.9 per cent of the 1938 imports (46.5 in 1937); Germany, 17.4 (13.2); United Kingdom, 11.1 (17.4). Of the exports, the United States took 59 per cent (64.1 in 1937); Germany, 12.8 (10.3); Curaçao, 10 (10.1).

Finance. For the calendar year 1938 ordinary, extraordinary and miscellaneous receipts including loans, etc., but excluding the surplus from 1937, totaled about 88,989,000 pesos and ordinary and extraordinary expenditures about 94,423,000 pesos. The 1939 budget estimated revenues and expenditures at 89,249,000 pesos. The ordinary budget for 1940 balanced at 86,106,000 pesos; special purpose budget, at 2,745,000 pesos; special budget for repayment of 1932 defense loan, at 2,775,000 pesos.

The public debt on Dec. 31, 1938, totaled about 186,310,000 pesos (188,776,000 on Dec. 31, 1937). Exchange rates of the Colombian peso in 1938: Controlled, \$0.5586 (\$0.5450 in 1937); curb, \$0.5435 (\$0.5494).

Transportation. There were 1918 miles of railway line in operation in 1938; 84 miles of line were under construction in 1939. Highways extended 14,637 miles (1939) and 190 miles were under construction. In 1938 about 3,600,000 tons of cargo were moved by rail and 849,000 tons on the Magdalena River. Operating statistics of the "SCADTA" (Colombian-German Air Transport Co.) for 1938: Miles flown, 2,154,279 (1,812,294 in 1937); passengers, 54,969 (42,590 in 1937); air mail, 140,655 lb. (117,495); total pay load, 11,913,053 lb. (8,902,100). Colombia also is served by the Pan American Airways.

Government. The Constitution of Aug. 5, 1886, vests executive power in a President elected

for four years by direct popular vote and ineligible for re-election for four years after completion of his term. A Congress of two houses exercises the legislative power. The Senate has 56 members, elected for 4 years by departmental assemblies; the Chamber of Deputies, 118 members, elected for 2 years by direct suffrage. Extensive amendments to the Constitution were voted in 1936 (see 1936 YEAR BOOK, p. 174 f.). President in 1939, Dr. Eduardo Santos (Liberal), who assumed office Aug. 7, 1938. The Conservatives abstained from voting in the 1935 and 1937 elections with the result that both houses of Congress were composed entirely of Liberals of various shades of opinion.

HISTORY

Parliamentary Elections. The annual convention of the Conservative party at Bogotá voted on Feb. 7, 1939, to participate in the biennial congressional elections, thus ending the boycott policy adopted during the 1935 and 1937 elections. The election of March 19 was one of the most orderly and free in Colombian history. The Liberals captured 76 seats in the Chamber of Deputies against 42 for the Conservatives. The Liberals also won majorities in each of the 14 departmental assemblies, with the result that the new Senate chosen by the departmental assemblies in April was composed of 39 Liberals and 19 Conservatives. The Liberals in March had captured control of four departmental assemblies formerly dominated by the Conservatives. They continued their sweep of the polls in the municipal elections of October 1, winning about 600 of the 800 contested offices.

The national convention of the Liberal party, held in Bogotá July 15-19, was marked by the resumption of the struggle between Left and Right wing groups headed by ex-President Alfonso López and the supporters of President Santos, respectively. A new directorate was chosen consisting of ex-President López, Minister of Government Carlos Lozano, Gabriel Turbay, former chairman of the directorate; the Leftist leader Jorge Gattán, Col. Luis Cano, and Lucas Caballero, former Minister to the Central American republics. Most of them were supporters of the policies of Dr. López.

Congress and Legislation. In accordance with the constitutional amendment voted in 1938, Congress met for its annual five-months' session on July 20. In his message inaugurating the session, President Santos reported a substantial improvement in the economic and financial situation, urged constitutional reforms to secure the independence of the judiciary, and mentioned the improved relations between the state and the Roman Catholic Church. He emphasized the need for technical progress in strengthening the air service and other departments of national defense. As to foreign policy, President Santos declared that his country would take steps to prevent the safety of the Panama Canal from being threatened from its territory. He said that the government was anxious to resume service on its foreign loans on the basis of its real capacity to pay. Negotiations for a readjustment of the dollar debt were continued during the year with the Foreign Bondholders Protective Council of New York, but no agreement on terms for the resumption of interest and amortization payments was reached.

The government placed upon the newly estab-

lished territorial credit banks the additional task of making long term mortgage loans for the construction of dwellings for agricultural workers. The influx of Jewish and other refugees from Europe led the government on March 14 to establish the Immigration and Colonization Committee to formulate a permanent immigration policy. On May 16 all immigration of Jewish, Czech and Spanish refugees was suspended. Some 3500 Jews had entered Colombia in the preceding eight months and applications for entry had been made by 5000 more. The government's action was forced by the increasing protests of Colombian merchants and professional men against the competition of the newcomers. Another decree of March 10 established the National Cost of Living Commission to prevent an undue rise in the cost of prime necessities. A bill to give the President extraordinary powers until July, 1940, was introduced by seven Cabinet Ministers on December 5.

Public and Private Works. The National Railways Administrative Council in 1939 commenced the construction of a number of government-operated hotels to stimulate the tourist trade. Other public works completed during the year included the new port of Barranquilla, a 27-mile section of the Pacific Railway, and a number of important highways. The construction of additional schools and reorganization of the educational system was continued. Recommendations for curbing alleged anti-government political propaganda in Catholic schools conducted by the Christian Brothers' order were submitted to the cabinet on May 21. The government initiated a reforestation programme.

Of exceptional economic importance was the opening at the end of September of a 250-mile oil pipe-line, with a parallel highway, built by the Gulf Oil Company from the rich Catatumbo fields near the Venezuelan border across a high range of mountains to the Caribbean at Puerto Covenas. There a harbor for the exportation of petroleum was constructed and a refinery was to be built. The pipe-line was expected to yield the Colombia Government royalties of \$1,160,000 during the first year of operation, during which it was expected to handle only one-third of its ultimate capacity.

Foreign investments in petroleum and other mining enterprises were encouraged by the Santos Government despite demands in radical circles for either nationalization or heavy taxation of mining properties. Mining shares on the Bogotá exchange dropped sharply on May 10 when the Council of State ordered the return to the national reserves of alluvial gold workings on the Telembi River operated under a concession by a subsidiary of the Choco Pacifico Mining Co. of New York. However this decision was reversed by the Supreme Court of Colombia, which on July 19 upheld the company's title. The latter decision was considered an important precedent in affirming the validity of existing titles to mining properties.

Foreign Relations. After a debate on foreign policy indicating the existence of widespread Nazi propaganda, working through Spanish Fascist organizations and some elements of the Conservative party, the Chamber of Deputies on August 23 approved the government's policy of "close understanding with American nations and harmonious collaboration with the Good Neighbor policy of the President of the United States, based on international juridical equality and unity

of action in defending this continent and democracy."

Additional evidence of close United States-Colombian collaboration in defense of the Panama Canal and the principle of hemisphere solidarity was seen in the visit of Gen. David L. Stone and a group of other high army officers from the Canal Zone to Bogotá early in July. After the outbreak of the European war, the State Department at Washington was reported to have objected to the employment of some 20 German pilots, understood to be reserve officers of the German air corps, by the SCADTA air system. The Bogotá authorities on their own initiative had taken steps to prevent a possible air raid on the Panama Canal by the German pilots.

In line with proposals made by President Santos in July, the German-Colombian SCADTA Co. was merged with the Colombian-owned Saco Company on October 26, placing all internal air lines under Colombian control. The new company (Colombian Air Navigation Co.) employed Colombian and United States pilots. On September 2 President Santos in a message to all American governments suggested immediate application of the Pan American conventions to safeguard the neutrality and independence of the hemisphere. This step led to the convocation of the conference of Foreign Ministers in Panama (see PAN AMERICANISM; PAN AMERICAN UNION).

Friction with the Franco Government in Spain also developed during the year. The Franco decree providing for the establishment of Falangist (Fascist) units among Spanish immigrants in Latin America led President Santos to declare on July 20 that "the intention of establishing centers or branches of foreign political organizations will be considered unfriendly acts, whatever the politics of the group." A month earlier considerable indignation was aroused by the demand of Franco's Minister in Bogotá for retraction of an article in the newspaper *Liberal* concerning executions in Spain. The Minister had not yet presented his credentials. Mass meetings were held throughout the country demanding the Minister's expulsion and even the pro-Franco Conservative press criticized the Minister's action. A treaty of non-aggression, conciliation, arbitration and juridical procedure was signed with Venezuela on Dec. 17, 1939.

See ARGENTINA under *History*.

COLONIZATION. See ALASKA.

COLORADO. Area and Population. Area, 103,948 square miles; included (1930) water, 290 square miles. Population: Apr. 1, 1936 (census), 1,035,791; July 1, 1937 (Federal estimate), 1,071,000; 1920 (census), 939,629. Denver, the capital, had (1930) 287,861 inhabitants; Pueblo, 50,096.

Agriculture. Colorado harvested, in 1939, 4,910,400 acres of principal crops: This was about five-sixths of the total for 1938 and six-sevenths of the average for 1928-37. Tame hay, on 1,037,000 acres, made 1,537,000 tons (\$13,987,000, estimated farm value); wheat, on 1,072,000 acres, 12,217,000 bu. (\$7,452,000); sugar beets, 145,000 acres, 1,539,000 tons (value of the previous crop, that of 1938, estimated at \$8,344,000); potatoes, 90,000 acres, 14,400,000 bu. (\$9,360,000); corn, 766,000 acres, 8,043,000 bu. (\$4,906,000); dry beans, 272,000 acres, 1,360,000 100-lb. bags (\$4,537,000); barley, 388,000 acres, 7,566,000 bu. (\$3,405,000); oats, 145,000 acres, 4,205,000 bu. (\$1,514,000).

Manufacturing. Establishments engaged in

manufacturing in Colorado in 1937 numbered 1233 (in 1935, 1160); employed 25,932 wage-earners (in 1935, 20,858); and paid wages totaling \$31,753,039 (in 1935, \$21,530,164). To their output of goods, attaining \$237,838,370 (for 1935, \$171,350,403), they contributed by manufacture \$92,103,247 (in 1935, \$63,588,385). Meat-packing produced goods to the total of \$39,805,919 in 1937.

Mineral Production. Colorado's yearly production of native minerals totaled \$67,338,548 for 1937, according to the most recent estimate of the Bureau of Mines. Coal contributed the highest stated component to this total; molybdenum, for which the total yearly production by value was not given for this State, apparently rivaled coal as the year's leading product, but still ranked second; gold was third, silver fourth in importance. The mining of coal decreased to about 5,676,000 net tons for 1938, from 7,187,000 for 1937 (value, \$18,327,000). Molybdenum, of which the Climax Molybdenum Company was the State's single producer, was mined in 1938 to the total of 28,242,085 pounds of metal in the form of the sulphide, as against 22,750,368 pounds for 1937. The total for 1938 came to some 84 per cent of the production of the whole Union. Mines shipments of molybdenum in 1938, lower than their production were reckoned to total \$17,977,000 in value, of which much the greatest part was ascribable to Colorado. The output of petroleum, produced in moderate quantity, diminished to about 1,412,000 barrels for 1938, from 1,605,000 barrels (value, \$1,800,000) for 1937.

The yearly value of the production in Colorado of gold, silver, copper, lead, and zinc, about \$22,245,979 for 1939, slightly exceeded that for 1938, of \$22,073,663. The mines' output of gold was about 364,719 ounces for 1939, as against 367,468 for 1938; by value, \$12,765,165, as against \$12,861,380. That of silver rose to some 8,393,642 ounces (1939) from 7,932,095 (1938); by value, to \$5,697,502, from \$5,127,819. That of copper declined in quantity to about 26,828,000 pounds (1939), from 28,342,000; while the total by value, \$2,790,112 for 1939, approximated that of \$2,777,516 for 1938. The minor production of zinc and of lead fell below that of 1938.

Education. Colorado's inhabitants of school age were stated to number 312,715 (from 6 years to 21) in 1939. Enrollments of all pupils in public schools totaled 233,141; this comprised 157,548 in the elementary group, 53,560 in high schools, and 22,033 otherwise listed. The year's expenditures for public-school education totaled \$23,017,216 and included \$17,795,571 of current expense. Teachers, numbering 9207, averaged \$1248.51 in yearly salary.

Legislation. The regular session of the 32d General Assembly, convening January 4 and closing April 28, had as its most urgent concern the need to divert revenue from existing but already allotted sources into the State's general fund, sustaining many old and indispensable services. Governor Carr, taking office, proposed that the previous Legislature's grant of the State's income tax toward the support of the public schools should be rescinded, in order that the State might meet "just as great an obligation" to the sick and dependent. Although the supporters of the public schools were powerful in the Legislature, it eventually assigned to the State's general fund 65 per cent of the proceeds of the income tax, reducing the schools' share to 35 per cent. The State's temporary tax on paid services, due to

expire June 30, was made to continue for two years thereafter, for further aid to the general fund; amendments lifted this tax from certain services, in response to agitation for terminating the "tax on human suffering"; these were services rendered by doctors, dentists, undertakers, nurses, and some others. The power of distraint was granted to the collectors of the sales tax, as a means of bringing payments of this tax into closer conformity with liability.

Critics of the Assembly held that it turned its back on the proposed reorganization of the over-many and ill-correlated branches of the State government. A carefully prepared study of this need and of ways to deal with it, existed in the Griffenhagen report; reorganizing bills were introduced in either house, only to rest in committee. Appropriation measures, as signed by the Governor, totaled \$11,233,766, which exceeded by less than half of 1 per cent the estimated revenue of the general fund for the biennium; he had pared the appropriations down from higher totals passed by the session. Miscellaneous enactments included the creation of a system for the settlement of fines for drivers' minor offenses by payment to the State's Motor Vehicle Department, without proceedings in court; the requirement that physicians test the blood in pregnancy, for sign of venereal disease; tests to the same purpose as prerequisite to a marriage certificate; and provision for a legislative investigation of un-American activities in the State.

A brief special session followed the regular session; it dealt with charges against two members of the State Civil Service Commission, Heman C. Getty and Mrs. Clara C. Wilkins. The charges, having to do with alleged levies on applicants for places in the State's service, were dismissed.

Political and Other Events. Governor Carr, inaugurated January 10, made his inaugural address the occasion for advocating many of the reforms proposed some time before, in the Griffenhagen Report, as needful in the improvement of the structure of the State government; he was unable to induce the Legislature to enact a number of bills for effecting such changes; with difficulty he prevailed in a struggle for the adoption of taxes that would approximately cover the expenditure for the general purposes of the State government, not specially assured by revenue from earmarked sources. His administration made unusual efforts to collect in full the taxes due, invoking the power of distraint of the goods of delinquent payers of the sales tax. The State was reported to have ended the fiscal year June 30 without current deficit; this was ascribed to success in making greater collections of existing taxes applicable to the general fund. The payments of the State's old-age assistance continued as provided by constitutional amendment, but the monthly rate varied widely with the tide of the income from the taxes particularly segregated to this use. For January the awards of pension averaged \$39.93; from this the State deducted \$8 because of insufficiency of allotted funds, and the average of actual payments was therefore \$31.93.

The State's compact with Texas and New Mexico, for the division among the three of the right to use the waters of the Rio Grande River, received Federal approval May 31; representatives of the three States had signed it in 1938 and all three had subsequently given it legislative ratification. Differences with Wyoming over waters of the Laramie River arose in June, persons in Colo-

rado having broken the fastenings of headgates closed under court order after the taking of the maximum quantity of water; State authorities, failing to stop the taking of water were cited for contempt of the U.S. Supreme Court's decree. The State Civil Service Commission became involved during September in discords among the members and seemed unable to proceed with business; the Governor proposed that the members resign, but his counsel was not followed.

Railroads in Colorado were extensively involved during the year in litigation and in proceedings before administrative bodies, with regard to taxes and proposed abandonments of lines. The State Tax Commission had raised the taxes of railroads by virtually 20 per cent in 1938. Some of the companies remained delinquent as to payment of taxes that they had been unable to meet in years of great adversity. Lines that might under better conditions have been seized and sold by taxing bodies to meet companies' fiscal liability were in some cases the ones that companies wanted to abandon in order to reduce unprofitable operation. The railroads contesting the increase of their taxes imposed in 1938 sued in the Federal courts; a District Court's decision in their favor was overruled by the Circuit Court, which held (August 22) that the companies should first have exhausted the possibility of recourse to the State courts. The Colorado and Southern Railway abandoned in February a piece of line running from Idaho Springs to Silver Plume, including a metal trestle 303 feet long, over Clear Creek, formerly a noted work of engineering. The Denver and Rio Grande Western, long in receivership, was the subject of a plan of reorganization approved by the Interstate Commerce Commission, but as this plan favored the claim of the Reconstruction Finance Corporation, to the disadvantage of other leading creditors, a committee of these proposed an alternative surrendering to the Corporation the Denver and Salt Lake line and thus abandoning the operation of the Moffat tunnel and the Dotsero cut-off, which had been built at great expense to give Denver its connections beyond the continental divide. The State's programme of highway-building did not accord with the requirements of the Federal Bureau of Public Roads, which called upon Colorado to construct a highway through Clear Creek Canyon. After reported Federal intimation that the State might not be found qualified for U.S. road aid, the State's willingness to proceed with the Clear Creek work was expressed.

Work on the Green Mountain dam and tunnel, part of the Colorado-Big-Thompson system of structures for the impounding and diversion, through the mountains, of water, was interrupted in July and August by a severe strike. Governor Carr sent a force of the National Guard to the scene August 3, after four men had been wounded in a shooting-encounter. The contracting company granted the union-shop system August 22, to the striking unions, connected with the AFL.

In Denver the municipal Housing Authority undertook the construction of a group of dwellings for 718 families of slum-dwellers, at an expected cost of \$3,500,000. Railroads entering Denver combined in a plan to build a market on Wazee Street; the city was asked to lease and operate the market at its completion. Denver adopted a municipal tax on cigarettes, at a cent a package, to go into effect Jan. 1, 1940; the State's Treasurer thereafter asserted, December 13, that the State, in virtue of the old-age-pension amendment,

would claim 85 per cent of the proceeds and that the tax, once in effect, could not be repealed. The city council moved for the repeal of this and of other new taxes likely to be claimed in part by the State. The neighborhood of Denver experienced what was called the dryest year since 1872; only 7.58 inches of rain (6.47 inches below average) were reported to have fallen in 1939.

Colorado Springs announced the retirement October 1 of the last of the debt on its municipally owned system for purveying gas and electric current; the system was said to have retired \$2,200,000 of bonds since its start in 1926, and to have made yearly contributions to municipal revenue: for 1938, \$180,000, or 28 per cent of such revenue. At Cripple Creek a celebration (September 4) marked the dedication of the Carlton Tunnel, then in course of construction by private enterprise, and designed on its completion by 1942 to drain deep levels of mines extending under about 30 square miles of the Cripple Creek area.

At Caddoa, in Bent County, the start of work on the construction of the Caddoa Dam was celebrated, October 13, with a barbecue and speeches by Governor Carr and others. The Caddoa Dam was to be built by the Army Engineers at an expected cost of \$15,000,000, to bar the Arkansas River with an earthen dike 120 feet higher than the lowest part of the river-bed and 13,000 feet long. The resulting reservoir was to supply water for irrigation and to hold back floods.

Officers. Colorado's chief officers, serving in 1939, were: Governor, Ralph L. Carr (Rep.); Lieutenant-Governor, John C. Vivian; Secretary of State, George E. Saunders; Auditor, Homer F. Bedford; Treasurer, Charles M. Armstrong; Attorney-General, Byron G. Rogers; Superintendent of Public Instruction, Inez Johnson Lewis.

COLORADO, UNIVERSITY OF. A coeducational State institution of higher learning in Boulder, Colo., founded in 1876. The number of students enrolled for the autumn of 1939 was 4166; the summer session enrollment was 3741. There were 281 faculty members. The total income for the year was \$2,158,904. The library contained 293,833 bound volumes, 5271 pamphlets, and 310 maps. A new library building is under construction. President, Robert L. Stearns, B.A., LL.B.

COLORADO RIVER. See **AQUEDUCTS**; **TEXAS**; **TUNNELS**; **WATERWORKS AND WATER PURIFICATION**.

COLOR PHOTOGRAPHY. See **PHOTOGRAPHY**.

COLUMBIA UNIVERSITY. A nonsectarian institution for the higher education of men and women in New York City, founded as King's College in 1754. At Morningside Heights, Broadway, and 116th Street are located: Columbia College (for undergraduate men); Barnard College (for undergraduate women); Teachers College, including the Advanced School of Education; the professional schools of law, engineering, architecture, journalism, business, library service, and optometry; and nonprofessional graduate faculties of political science, philosophy, and pure science. The College of Physicians and Surgeons and the School of Dental and Oral Surgery are at the Medical Center on West 168th Street, the College of Pharmacy on West 68th Street, Bard College at Annandale-on-Hudson, N. Y., and the New York Post-Graduate Medical School on East 20th Street. In addition, through university extension classes and the summer session, courses

are offered for resident students at Morningside Heights; and other courses are offered at Camp Columbia, as well as at several centres.

On the basis of the enrollment on Nov. 1, 1939, the total number of resident students for the year was estimated at 31,032, distributed as follows: Undergraduates, 2932, of whom 1801 were in Columbia College, 991 in Barnard College, 101 in Bard College, and 102 in other schools; and graduate students, 2857. The distribution of professional students was as follows: Law, 516; medicine, 682; engineering, 308; architecture, 57; journalism, 65; business, 540; dental and oral surgery, 282; pharmacy, 246; optometry, 92; library service, 507; and Teachers College, 7502; 5013 students were enrolled in university extension classes. 3100 were registered in special and extramural courses as nonresident students. There were 11,950 students registered for the summer session of 1939. The grand total of resident students is exclusive of 2580 duplicate registrations.

The faculty and officers of administration in 1939-40 numbered 3361, of whom all but 105 were in active service. This number was distributed as follows: Professors, 410; associate professors, 215; assistant professors, 349; associates, 213; instructors, 394; lecturers, 113; assistants, 306; curators, 5; associates, instructors, lecturers, and assistants in Teachers College, 192; associates, instructors, lecturers, and assistants in the College of Pharmacy, 15; associates, instructors, and lecturers in Bard College, 17; instructors in extension, not included above, 479; instructors in summer session, not included above, 441; officers of administration, 107; emeritus and retired officers, 105.

During the year 1938-39 the university received gifts in money representing a total of \$1,392,279.72. The principal gifts were: \$50,000 from the Carnegie Corporation for graduate medical instruction and research; \$173,000 from the estate of Mary B. Pell for general endowment; \$171,000 from the estate of William Campbell, for the Campbell (William) Fellowship in Scientific Research; \$183,000 from the estate of Benjamin N. Cardozo for the Cardozo (Benjamin N.) Fund to establish a chair in jurisprudence in the Law School; \$53,000 from the estate of Mary Purroy Mitchel for the Mitchel (John Purroy) Memorial Fund; \$171,000 from the Rockefeller Foundation for various special purposes.

The capital endowment of the university in 1939, excluding value of plant (including Barnard College, Teachers College, College of Pharmacy, Bard College, and New York Post-Graduate Medical School), was \$87,068,335. The estimated total resources as of June 30, 1939, were \$158,314,167. The annual budget for 1939-40 was \$11,292,700. The library contained 1,662,883 volumes. President, Nicholas Murray Butler, Ph.D., Hon.D., LL.D.

COLUMBUS. See EUROPEAN WAR; SHIPPING.

COMETS. See ASTRONOMY.

COMMERCE. See BUSINESS REVIEW; FEDERAL TRADE COMMISSION; IMPORTS AND EXPORTS; INTERSTATE COMMERCE COMMISSION; sections on *Foreign Trade* under the various countries.

COMMERCE, U.S. DEPARTMENT OF. Harry Lloyd Hopkins of Iowa was Secretary of Commerce during 1939. Edward J. Noble was appointed to the post of Under Secretary, which was created by Act of Congress in June. By the

administrative reorganization of July 1 (see under UNITED STATES), the division of foreign commerce was removed from the Department's Bureau of Foreign and Domestic Commerce and transferred to the Department of State.

The Department of Commerce continued, however, as the direct contact between the Government and American business as regards the determination of information to be obtained abroad and the analysis and dissemination of such information in the United States. Requests in connection with trade promotion and economic matters were still to be directed to the Bureau of Foreign and Domestic Commerce, as formerly. In July Secretary Hopkins appointed George Wythe to act as liaison officer between the Departments of Commerce and State.

As a result of the reorganization, the Bureau of Fisheries (q.v.) was placed under the Department of the Interior, the Lighthouse Service (q.v.) under the Treasury Department, and the Federal Employment Stabilization Office under the National Resources Planning Board in the President's Executive Office. At the same time, the Department took over the Inland Waterways Corporation, formerly an independent agency incorporated by the Secretary of War.

Steps were taken during the year to establish a clearing house in the Department of Commerce for business research activities throughout the nation, and a program of co-operation with universities in business research was introduced. Late in the year, Secretary Hopkins announced the formation of an Interdepartmental Committee to study and co-ordinate Government activities in combatting interstate trade barriers. For expenditures of the Department, see the table under PUBLIC FINANCE. Separate articles in this volume are devoted to the following divisions: CENSUS, BUREAU OF THE; PATENT OFFICE.

COMMERCIAL BUILDINGS. See ARCHITECTURE.

COMMODITY CREDIT CORPORATION. A United States government agency, formerly independent, integrated into the Department of Agriculture on July 1, 1939. The Commodity Credit Corporation is primarily a lending institution, making loans principally to producers to finance the carrying and orderly marketing of agricultural commodities. It was created as an agency of the United States on Oct. 17, 1933, by executive order, and its functions have been extended from time to time. On Mar. 4, 1939, its functions were extended to June 30, 1941, or such earlier date as may be determined by the President. The Corporation has a paid-in capital of \$100,000,000 and is authorized, with the approval of the Secretary of the Treasury, to have outstanding at any one time obligations aggregating up to \$900,000,000. See AGRICULTURAL ADJUSTMENT ADMINISTRATION; AGRICULTURE.

On Sept. 15, 1939, the Commodity Credit Corporation reported that it had disbursed since its inception a total of \$1,229,216,493, of which \$435,600,264 was outstanding. Loans held by the Cor-

Commodity	Dollars	Commodity	Dollars
Cotton	727,905,698	Raisins	3,780,889
Cotton Pool	51,415,842	Wheat	50,766,866
Corn	305,243,243	Wool, Mohair ..	3,334,840
Tobacco	9,639,384	Butter	34,376,958
Turpentine, Rosin	25,359,448	Dates	61,302
Figs	208,913	Pecans	440,649
Peanuts	12,473,860	Hops	1,456,709
Prunes	2,751,893		

poration totaled \$218,769,727 and loans held by banks through arrangement with the Corporation totaled \$216,830,537. As a result of its operations the Corporation owned on the above date 6,921,372 bales of cotton, 4,267,467 bu. of corn, and 10,663,015 bu. of wheat. The total disbursements, by commodities, as reported on Sept. 15, 1939, are shown in the accompanying table.

Carl B. Robbins was named President of the Corporation in August, 1939, succeeding Lynn P. Talley.

CARL B. ROBBINS.

COMMODITY PRICES. See BUSINESS REVIEW.

COMMUNICATIONS. See FEDERAL COMMUNICATIONS COMMISSION; RADIO; TELEGRAPHY; TELEPHONY.

COMMUNISM. The conclusion of the German-Soviet non-aggression pact of Aug. 24, 1939, and the subsequent sensational reversals of Soviet policy that followed Joseph Stalin's formal rapprochement with Adolf Hitler, profoundly affected the program and influence of the Third International (Comintern) and of the Communist parties in the various countries of the world.

Upon the announcement of the German-Soviet pact, the Comintern overnight abandoned the "party line" adopted by its Seventh Congress in 1935 (see 1935 YEAR BOOK, p. 160 f.), and the Stalinist Communist party organizations throughout the world immediately followed suit. The annual appeals to the workers of the world issued by the Comintern on May Day and on November 7 showed the extent of this tactical somersault.

The May Day appeal was issued while the Soviet Union was still seeking to rally world support against the double threat of German and Japanese aggression and while Moscow was striving to enlist Britain and France in a defensive pact on Soviet terms. Accordingly it called upon the workers everywhere to "demonstrate together with the workers of France and England against war arsonists, for a decisive rebuff to fascist aggressors and for application of military, economic and political sanctions against them." It continued:

You will demand from the bourgeois governments of England, France and the United States aid for the republicans of Spain, for the patriots of Czecho-Slovakia, Albania and Abyssinia and for the democrats of Austria to free them from the foreign yoke. . . . You will demonstrate for a united front of the workers of the whole world with the great country of socialism.

The appeal of November 7 was issued after the Soviet-German pact had paved the way for the German conquest of Poland, helped to embroil France and Britain in war with the Reich, and enabled Moscow to annex half of Poland and establish its undisputed control over the Baltic states. It was the general conviction of Soviet leaders that the war between the capitalist states would temporarily eliminate danger of an anti-Soviet coalition and provide a great impetus toward the expansion of communism. This conviction was expressed by the Old Bolshevik, Emil Yaroslavsky, in the Moscow *Bolshevik* of November 15.

Consequently the Comintern's November manifesto revived the pre-1935 summons to a world revolution against "imperialism, war, capitalism, and profiteering." It called upon the workers of Britain, France, and Germany to oppose the war; denounced Social Democrats and liberals in

the democratic countries for supporting the war against Germany; repudiated the former Communist united front policy; and attacked the American repeal of the arms embargo. The Comintern's interpretation of the war and of Soviet policy toward it was set forth as follows:

This war is the continuation of many years of imperialistic struggle in the camp of capitalism. Three of the richest States—Great Britain, France and the United States—dominate the most important world routes and markets of raw materials. They hold in subjection more than half of mankind.

Exploitation of toilers and exploitation of oppressed colonial peoples are covered with the hypocritical flag of democracy in order more easily to deceive the masses.

Against their world domination struggle other capitalist States who have lately entered the arena of colonial expansion.*** They wish to redive in their favor the sources of war materials, foodstuffs, gold reserves and human masses of the colonies. Such is the true meaning of this war, an unjust, reactionary, imperialist war.

In this war, all the capitalist States and above all the ruling classes of the belligerent States, are guilty. The working class cannot support such a war. Communists have always combatted such wars.

The Soviet Union has waged a tireless struggle for the preservation of peace for more than a score of years. The bourgeois governments have continued their silent policy of isolating the U.S.S.R.

Even when it was clear to everyone that war was already inevitable, the Soviet Union made a last attempt to save peace. It agreed to negotiations with the governments of Great Britain and France.

But the war provocateurs sought something else. They sought to utilize negotiations to lull the vigilance of the masses and to rid themselves of responsibility for a war that had already been prepared by them.

They instigated Poland against the land of the Soviets. While conducting negotiations with the U.S.S.R., they sought on the sly to goad Germany against the Soviet Union.

By concluding a non-aggression treaty with Germany the Soviet Union disrupted the crafty plans of the provocateurs of an anti-Soviet war. By this treaty it has placed its peoples outside the range of the carnage and narrowed the arena of fire of the European war.

By its appeals for cessation of the war and by its treaty of friendship and border delimitation with Germany, the Soviet Union introduces a new element into the cause of peace.

Advances of Communism. As a result of the outbreak of the European war, the Stalin variety of communism achieved some advances during 1939. The eastern half of Poland, annexed by the Soviet Union, was sovietized. The small Baltic states were forced to accept Russian domination and their sovietization was expected to follow in due course. A violent attack was launched upon bourgeois, capitalist democracy in Finland. The Russian advance into Poland placed communism in a much more advantageous position for expansion into southeastern Europe.

Moreover, the financial cost of the war was rapidly undermining private property and the other bases of middle-class society in Britain and France, and destroying the remnants of capitalism in Germany. The European and Chino-Japanese wars enabled Moscow to speed up the sovietization of Sinkiang and strengthen its influence over the provinces of northwest China controlled by the Chinese Communists. At the year end there were persistent reports that Soviet troops were preparing to carry the banners of Russian nationalism and Bolshevik class warfare southward into Iran, Afghanistan, and India, and southwestward into Rumania, and possibly other Balkan states. Apparently the unexpected difficulties encountered in Finland delayed these plans.

Setbacks to the Movement. The reverse side of the picture was not nearly so favorable to the success of world communism. Stalin's entente with Hitler, his invasion of Poland, his extortion of strategic bases, and mutual assistance pacts from the small Baltic states under threat of

invasion, and particularly his effort to subjugate Finland aroused world-wide revulsion and indignation. Thousands of Communists and fellow-travelers deserted the orthodox Communist (Stalinist) parties throughout the world, although the party apparatus in virtually all countries remained intact. From his place of exile in Mexico, Leon Trotsky declared the Hitler-Stalin rapprochement had broken the back of the Third International and insured the early demise of the Communist party in the United States.

Effect in the United States. While most leaders of the American Communist party and its press defended the Hitler-Stalin pact, there were numerous defections. According to Benjamin Stolberg, the party membership dropped from 60,000 to about 35,000 within three months after the non-aggression pact was concluded. Some of the dissenters shifted their allegiance to the Trotskyite and other anti-Stalin Communist factions, while others went over to the Socialist or other more conservative political movements.

There were also numerous schisms and defections within the so-called "Communist front" organizations, some 500 of which were said to have been formed, usually under hidden Communist inspiration, among liberal and left-wing elements. Among the more important organizations affected by dissensions of this nature were the American Student Union, American League for Peace and Democracy, American Committee for Protection of the Foreign Born, International Labor Defense, International Juridical Association, and American Youth Congress. On August 14, shortly before the German-Soviet pact, 400 leading American intellectuals published an open letter advocating closer co-operation between Soviet Russia and the United States to combat growing reactionary and Fascist movements. After the pact became known, most of those signing the letter repudiated their former views and bitterly denounced the Stalin regime for the "betrayal" of the liberal, democratic principles for which they stood.

Besides creating dissension within the ranks of the Communists and their supporters, Stalin's policy made Communists more than ever suspect to anti-Communist elements. The Congressional investigation of Communist and other "anti-American activities" gained wider popular support. Outbreaks of mob violence against Communist gatherings were reported in San Antonio, Detroit, and Aberdeen, Wash. Earl Browder, general secretary of the Communist party, was indicted on October 24 in New York City by a Federal grand jury on a charge of using a passport obtained by making a false statement. Indictments of William Wiener, national treasurer, and Nicholas Dozenberg, a founder of the American Communist party, followed on similar charges.

While awaiting trial Browder in a series of bitter speeches assailed President Roosevelt, the New Deal, the Pope, and many critics and Communist dissenters. He declared that "reactionary hysteria" was gripping the American bourgeoisie in the face of the "imperialist war" because they knew the war was "placing the Socialist revolution on the order of the day there (in Europe) as a practical question." "America itself," he declared in Boston on November 5, "is technically, objectively, the country which is the most ripe, the most prepared, for a quick transition to socialism, for which it lacks only the under-

standing and the will of the masses to that goal."

The Stalin-Hitler pact and the subsequent Soviet aggressions also provoked a strong counter-attack against Communist influence in American labor unions. The American Labor party of New York City on September 4 condemned the Communists of the United States as "betrayers of the labor movement, antagonists of democracy and protagonists of dictatorship." In subsequent months the leaders of the party conducted a vigorous drive to force out numerous Communists and Communist-dominated district clubs. In October John L. Lewis launched an anti-Communist drive within the Congress of Industrial Organizations, threatening to remove any officer or member found following Communist policy.

The influence of Communists in the schools was more carefully scrutinized. In a report published on December 15, Professor George S. Counts of Teachers College, national president of the American Federation of Teachers, said that while Communists constituted "but the smallest fraction of the total membership" of his federation, they had been able to achieve a "precarious, temporary control" over some locals. Bills to curb revolutionary activities found increasing public favor. The Devany bill passed in New York State on May 28 barred persons advocating forceful overthrow of the government from civil service and teaching positions in the public schools.

See also BRIDGES CASE, COMMUNIST PARTY, DIES COMMITTEE.

Other Countries. While Stalin's expansionist policies were said to appeal to the younger and more nationalistic elements in the Soviet Union, the repudiation of all the previous Bolshevik strictures against fascism and aggression was reported by Moscow correspondents to have caused considerable questioning and discontent within the Soviet Union itself. In the other European countries, with the exception of Germany and Bulgaria, the Stalin-Hitler accord shattered Communist influence and prestige seemingly beyond repair.

In France, where the Communist party had played a powerful role for more than a decade and polled over a million votes in the 1936 elections, the movement was weakened by the defection of many members and then outlawed by the government on September 26 for sponsoring defeatist propaganda. The French Parliament, municipal councils, and other governmental bodies were purged of Communists and many of the party leaders were arrested on charges of conspiring with or aiding the enemy.

The British Communist party was unmolested by the government, but was shaken by internal dissensions and numerous withdrawals. At the outset of the war it issued a manifesto calling on the people "to secure a military victory over the Fascist system." But in October it published an official "correction" of this manifesto, asserting that it "failed to take into account the basic changes in the international situation arising from the rejection of the peace front by Britain and France."

"By rejection of a firm peace front with the Soviet Union," the correction stated, "the British, French and Polish Governments have equal responsibility with German fascism for the present war." The new "party line" of opposition to the war led to the dismissal of Harry Pollitt as the party's general secretary. The anti-war propa-

ganda was continued during the remainder of the year, although opposed by many former Communists and their sympathizers. The Lord Provost of Glasgow declared in December that 1000 Communist agents were working to stir up trouble in certain industries of that city.

In Denmark, Norway, and Sweden the Soviet attack upon Finland brought hostility against the Communists to a high pitch. In the Danish and Swedish parliaments attempts of Communist members to speak led members of all other parties to walk out. Action to outlaw the Communist party in Sweden was in prospect at the year end. This situation was in contrast with the attitude displayed by the British, French, and Norwegian delegations to the eighth Congress of the International Federation of Trade Unions at Zurich, Switzerland, early in July. At that time these delegations supported a resolution inviting the Soviet trade unions to affiliate with the I.F.T.U. The resolution was defeated by 46 votes to 37.

In Mexico and Chile, the two Latin American countries where orthodox Communist parties had gained a firm foothold, the Soviet-German pact had equally disastrous repercussions upon Stalin's followers. In both countries, the movement was discredited and shorn of much of its former influence. In these countries, too, anti-Communist elements and movements gained further support. The Vatican, aroused by the sovietization of Catholic Poland, took an even more active lead in the world struggle against communism.

In Spain the effort of the Third International to gain control of the revolutionary and liberal groups supporting the Loyalist Government was ended for the time being by General Franco's victory. Communists who failed to escape abroad were ruthlessly extirpated.

See CHILE, CHINA, FINLAND, FRANCE, GERMANY, MEXICO, SPAIN, UNION OF SOVIET SOCIALIST REPUBLICS, and other countries, under *History*; *DEMOCRACY*; *FASCISM*.

COMMUNIST PARTY. Unlike the political parties of the type usual in the United States, the Communist Party has an enrolled membership of whom dues are required. The membership was stated at the beginning of 1939 as 80,327. The vote for the National ticket of the Communist party in the election of 1936 was 80,159. The party was chartered in a number of States; Representative Dies (see *DIES COMMITTEE*), in an address (August 1) urged that its State charters be revoked. The party also constituted a section of the Communist International, a world-wide body having its headquarters in Russia.

For particulars of the investigation of Communist activity by the *DIES COMMITTEE*, see under that title. The number of members of the party in the United States was estimated by Earl Browder, in connection with that investigation, as about 100,000. Members' payments of dues, as earlier reported by Browder for 1937, totaled \$73,352. William E. Browder, brother of the foregoing and executive secretary of the party, stated in the course of the Dies investigation that the dues paid by members of the New York State organization of the party, about 27,000 in number, averaged \$20 to the member. The titular head of the party, the party chairman, in 1939 was William Z. Foster.

In New York City the party ousted from membership (December 14) two officials of a strong trade union, and five other of this union's officials reportedly resigned from the party. This labor

organization, Local 22 of the Ladies' Garment Workers' Union, had a reported membership of some 30,000, including 500 members of the party. The difficulty between the organization and the party, represented by the former as involving the union's policies, had apparent connection also with anti-Communist sentiment inspired among Jewish garment-workers by the party's attitude of approval toward the entente between Germany and the Russian Communist government. On December 15 the party further altered its course to follow Russia's by advising its members in New York City to give up a previously established boycott of German goods. See *COMMUNISM*.

COMMUNITY CHESTS AND COUNCILS, Inc. An association organized in February, 1918, when only 21 cities were using the centralized method of raising philanthropic and charitable funds. It was first known as the American Association for Community Organization, a name which it continued to bear until 1927, when the name was changed to the Association of Community Chests and Councils. In 1933 the association was incorporated, and adopted its present name. The Association staff is guided by an Advisory Committee of local chest and council executives in carrying out the policies decided upon by the Board of Directors. The association is financed by dues from its corporate members.

The purpose of Community Chests and Councils is to aid and assist local community chests in their efforts to raise, manage, and distribute money for social welfare purposes; to encourage and stimulate collective community planning for social welfare, and the development of better standards for community organization, as well as to harmonize and make more efficient the work of all social welfare organizations; to co-operate with nation-wide and other organizations in joint efforts to promote social welfare; to carry on other projects in connection with the achievement of all these purposes.

The Mobilization for Human Needs is a programme of national information regarding the social needs of the times, urging citizens to support their local private welfare appeals. It is sponsored by a National Citizens' Committee of public-spirited men and women.

Thirty-six national organizations for social welfare and health co-operate in this effort, with Community Chests and Councils, Inc., acting as administrative agency. The Mobilization for Human Needs arranges public meetings of national significance, secures the donation of nation-wide radio time, and stimulates the publication of articles and editorials in magazines and newspapers. It does not raise a national fund, but throws its strength to local campaigns of chests and welfare funds.

Of the 522 chests in operation, 506 are in the United States proper, 2 in the territory of Hawaii, 1 in the Virgin Islands, and 13 in Canada and other foreign countries. All but six cities of 100,000 population and over in the United States have community chests. Nine million contributors in 518 cities gave \$82,808,793 to community chests to be used for private social work in their communities during 1939.

The officers in 1939-40 were: Honorary and acting president, George E. Vincent, Greenwich, Conn.; vice presidents, John Stewart Bryan, Richmond, Va., and Geoffrey Smith, Philadelphia, Pa.; treasurer, J. Herbert Case, Plainfield, N. J.; secretary, Pierce Atwater, St. Paul, Minn.;

executive vice president, Allen T. Burns. Headquarters, 155 East 44th St., New York City.

COMORO ISLANDS. See MADAGASCAR.

COMPENSATION. See LABOR CONDITIONS.

COMPOSERS, AUTHORS AND PUBLISHERS, THE AMERICAN SOCIETY OF (ASCAP). See PERFORMING RIGHT SOCIETIES.

CONCILIATION SERVICE, U.S. See UNITED STATES CONCILIATION SERVICE.

CONGO, BELGIAN. A colony of Belgium, in central Africa. Area, 902,082 square miles; population (Jan. 1, 1938), 10,217,408 natives and 23,091 whites. The language spoken by the natives is Kiswahili; the commercial language of the Upper Congo is Bangala; near the coast, Fiote is spoken; in the southern part of the country the language is Tshiluba. Chief towns: Léopoldville (capital), Matadi, Elisabethville, Jadotville, Stanleyville, Coquilhatville.

Production and Trade. Important agricultural products in 1937 (in metric tons) palm oil (69,133), palm-kernel oil (43,000), ginned cotton (38,000; 35,000 in 1938), cottonseed (83,600; 77,000 in 1938), coffee (19,600; 26,000 in 1938), copal gum (16,848), sugar (15,000), maize (11,334), rubber, cocoa, groundnuts, timber, and bananas. The country is rich in minerals, the chief being copper (124,000 metric tons in 1938), diamonds (5,059,927 carats in 1937), gold (20,993 kilograms in 1938), silver (76.6 metric tons in 1938), tin (8900 metric tons in 1938), manganese (3800 metric tons in 1938), cobalt, radium, uranium, and iron. In 1937 the output of ivory was 183 metric tons. Cattle raising is successfully carried on only in the districts in which there are no tsetse flies. In 1938, imports were valued at 1,022,000,000 francs; exports, 1,897,000,000 francs (Belgian franc averaged \$0.03378 for 1938).

Communications. The navigable portions of the river Congo and its tributaries are an important means of communication and transport to the interior. Air services link most of the important towns in the colony and there is a weekly service in operation with Brussels in Belgium and Léopoldville and Elisabethville. In 1938 there were 3051 miles of railway, 42,336 miles of roads, 4209 miles of telegraph lines, 4000 miles of telephone lines, and 28 wireless stations.

Government. For 1938, estimated revenue 748,216,000 francs; estimated expenditure, 798,216,000. Public debt (Jan. 1, 1938), 5,917,350,575 francs. The Belgian Congo is divided into 6 provinces and 16 administrative districts. Each province has a capital bearing the same name as the province. Government is under the control of the Belgian minister for the colonies at Brussels, who is aided by a colonial council (of which he is president) consisting of 14 members (8 appointed by the King, 3 chosen by the senate, and 3 by the chamber of representatives). A governor-general (aided by a vice-governor-general, state inspectors, and 6 provincial commissioners) represents the King in the colony. Governor-General, Pierre Ryckmans (appointed December, 1934).

Ruanda (rōo-ān'dā)-Urundi (ōo-rōon'dē). The two districts adjoining eastern Belgian Congo, formerly a part of German East Africa, mandated to Belgium by the League of Nations (July, 1919). Area, 21,230 square miles; population (Jan. 1, 1938), 3,720,000 of whom 1076 were Europeans. Capital, Usumbura. Livestock raising is the main occupation of the people. The chief products are maize, potatoes, groundnuts, and gold. In 1937, imports were valued at 72,630,719 francs; exports,

69,678,548 francs. For 1938, estimated revenue (ordinary and extraordinary) was 45,597,525 francs; estimated expenditure (ordinary), 37,386,946 francs. Public debt (Jan. 1, 1938), 150,000,000 francs. Both districts were united, for administrative purposes, with the Belgian Congo and placed under the supervision of a vice-governor (law of Aug. 21, 1925).

CONGO, FRENCH. See FRENCH EQUATORIAL AFRICA.

CONGREGATIONAL AND CHRISTIAN CHURCHES, THE GENERAL COUNCIL OF THE. A general council was instituted at Seattle, Wash., June 27, 1931, when the National Council of the Congregational Churches in the United States and the General Convention of the Christian Church merged their activities in this new organization. The International Council which was to have been held at Wellesley, Mass., during July, 1940, has been indefinitely postponed because of war conditions. The next biennial meeting will be held at Berkeley, Calif., Aug. 15-22, 1940. For the officers elected at the last biennium, see the YEAR BOOK for 1938.

The headquarters of the General Council of the Congregational and Christian Churches are at 287 Fourth Avenue, New York City. Those of the Board of Home Missions at the same address, with offices also at 14 Beacon St., Boston, Mass., and those of the American Board at 14 Beacon St., Boston, Mass. For statistics, see RELIGIOUS ORGANIZATIONS.

CONGRESS (U.S., MEMBERS AND OFFICERS). The members of the 76th Congress, at its assembly on Jan. 3, 1939, are shown in the following lists; political affiliation is shown in each case after the name, by a D (Democrat), R (Republican), P (Progressive), FL (Farmer Labor), AL (American Labor), or I (Independent).

SENATE

ALABAMA

John H. Bankhead, 2d., D Lister Hill, D

ARIZONA

Henry F. Ashurst, D Carl Hayden, D

ARKANSAS

Hattie W. Caraway, D John E. Miller, D

CALIFORNIA

Hiram W. Johnson, R Sheridan Downey, D

COLORADO

Alva B. Adams, D Edwin C. Johnson, D

CONNECTICUT

Francis T. Maloney, D John A. Danaher, R

DELAWARE

John G. Townsend, Jr., R James H. Hughes, D

FLORIDA

Charles O. Andrews, D Claude Pepper, D

GEORGIA

Walter F. George, D Richard B. Russell, Jr., D

IDAHO

William E. Borah, R D. Worth Clark, D

ILLINOIS

J. Hamilton Lewis, D Scott W. Lucas, D

INDIANA

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WISCONSIN
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WYOMING
Joseph C. O'Mahoney, D H. H. Schwartz, D

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5. Vacancy
6. William D. Byron, D

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13. R. B. Wigglesworth, R
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15. Charles L. Gifford, R

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4. Clare E. Hoffman, R
5. Carl E. Mapes, R
6. William W. Blackney, R
7. Jesse P. Wolcott, R
8. Fred L. Crawford, R
9. Albert J. Engel, R
10. Roy O. Woodruff, R
11. Fred Bradley, R
12. Frank E. Hook, D
13. Clarence J. McLeod, R
14. Louis C. Rabaut, D
15. John D. Dingell, D
16. John Lesinski, D
17. George A. Dondero, R

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4. Melvin J. Maas, R
5. Oscar Youngdahl, R
6. Harold Knutson, R
7. H. Carl Andersen, R
8. William A. Pittenger, R
9. R. T. Buckler, FL

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2. Wall Doxey, D
3. William M. Whittington, D
4. Aaron Lane Ford, D
5. Ross A. Collins, D
6. William M. Colmer, D
7. Dan R. McGehee, D

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2. William L. Nelson, D
3. Richard M. Duncan, D
4. C. Jasper Bell, D
5. Joseph B. Shannon, D
6. Reuben T. Wood, D
7. Dewey Short, R
8. Clyde Williams, D
9. Clarence Cannon, D
10. Orville Zimmerman, D
11. Thomas C. Hennings, Jr., D
12. C. Arthur Anderson, D
13. John J. Cochran, D

MONTANA

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2. James F. O'Connor, D

NEBRASKA

1. George H. Heinke, R
2. Charles F. McLaughlin, D
3. Karl Stefan, R
4. Carl T. Curtis, R
5. Harry B. Coffee, D

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2. Foster Stearns, R

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2. Walter S. Jeffries, R
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5. Charles A. Eaton, R
6. Donald H. McLean, R
7. J. Parnell Thomas, R
8. George N. Seger, R
9. Frank C. Osmer, Jr., R
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17. Bruce Barton, R
18. Martin J. Kennedy, D
19. Sol Bloom, D
20. Vito Marcantonio, AL
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23. Charles A. Buckley, D
24. James M. Fitzpatrick, D
25. Ralph A. Gamble, R
26. Hamilton Fish, R
27. Lewis K. Rockefeller, R
28. William T. Byrne, D
29. E. Harold Cluett, R

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1. Lindsay C. Warren, D
2. John H. Kerr, D
3. Graham A. Barden, D
4. Harold D. Cooley, D
5. Alonzo D. Folger, D
6. Carl T. Durham, D
7. J. Bayard Clark, D
8. W. O. Burgin, D
9. Robert L. Doughton, D
10. Alfred L. Bulwinkle, D
11. Zebulon Weaver, D

NORTH DAKOTA

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OHIO

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2. William E. Hess, R
3. Harry N. Routzohn, R
4. Robert F. Jones, R
5. Cliff Clevenger, R
6. James G. Polk, D
7. Clarence J. Brown, R
8. Frederick C. Smith, R
9. John F. Hunter, D
10. Thomas A. Jenkins, R
11. Harold K. Claypool, D
12. John M. Vorys, R
13. Dudley A. White, R
14. Dow W. Harter, D
15. Robert T. Secrest, D
16. James Seccombe, R
17. William A. Ashbrook, D
18. Earl R. Lewis, R
19. Michael J. Kirwan, D
20. Martin L. Sweeney, D
21. Robert Crosser, D
22. Chester C. Bolton, R

At Large: George H. Bender, R; L. L. Marshall, R

OKLAHOMA

1. Wesley E. Disney, D
2. Jack Nichols, D
3. Wilburn Cartwright, D
4. Lyle H. Boren, D
5. Mike Monroney, D
6. Jed Johnson, D
7. Sam C. Massingale, D
8. Phil Ferguson, D

At Large: Will Rogers, D

OREGON

1. James W. Mott, R
2. Walter M. Pierce, D
3. Homer D. Angell, R

PENNSYLVANIA

1. Leon Sacks, D
2. James P. McGranery, D
3. Michael J. Bradley, D
4. J. Burrwood Daly, D
5. Fred C. Gartner, R
6. Francis J. Myers, D
7. George P. Darrow, R
8. James Wolfenden, R
9. Charles L. Gerlach, R
10. J. Roland Kinzer, R
11. Patrick J. Boland, D
12. J. Harold Flannery, D
13. Ivor D. Fenton, R
14. Guy L. Moser, D
15. Albert G. Rutherford, R
16. Robert F. Rich, R
17. J. William Ditter, R
18. Richard M. Simpson, R
19. John C. Kunkel, R
20. Benjamin Jarrett, R
21. Francis E. Walter, D
22. Chester H. Gross, R
23. James E. Van Zandt, R
24. J. Buell Snyder, D
25. Charles I. Faddis, D
26. Louis E. Graham, R
27. Harve Tibbott, R
28. Robert G. Allen, D
29. Robert L. Rodgers, R
30. Robert J. Corbett, R
31. John McDowell, R
32. Herman P. Eberharter, D
33. Joseph A. McArdle, D
34. Matthew A. Dunn, D

RHODE ISLAND

1. Charles F. Risk, R
2. Harry Sandager, R

SOUTH CAROLINA

1. Thomas S. McMillan, D
2. Hampton P. Fulmer, D
3. Butler B. Hare, D
4. Joseph R. Bryson, D
5. James P. Richards, D
6. John L. McMillan, D

SOUTH DAKOTA

1. Karl E. Mundt, R
2. Francis H. Case, R

TENNESSEE

1. B. Carroll Reece, R
2. J. Will Taylor, R
3. Sam D. McReynolds, D
4. Albert Gore, D
5. Joseph W. Byrne, Jr., D
6. Clarence W. Turner, D
7. Herron Pearson, D
8. Jere Cooper, D
9. Walter Chandler, D

TEXAS

1. Wright Patman, D
2. Martin Dies, D
3. Lindley Beckwith, D
4. Sam Rayburn, D
5. Hatton W. Sumners, D
6. Luther A. Johnson, D
7. Nat Patton, D
8. Albert Thomas, D
9. Joseph J. Mansfield, D
10. Lyndon B. Johnson, D
11. W. R. Poage, D
12. Fritz G. Lanham, D
13. Ed Gossett, D
14. Richard M. Kleberg, D
15. Milton H. West, D
16. Ewing Thomason, D

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|-------------------------|-------------------------|
| 17. Clyde L. Garrett, D | 20. Paul J. Kilday, D |
| 18. Marvin Jones, D | 21. Charles L. South, D |
| 19. George H. Mahon, D | |

UTAH

- | | |
|-------------------|----------------------|
| 1. Abe Murdock, D | 2. J. W. Robinson, D |
|-------------------|----------------------|

VERMONT

Representative at Large: Charles A. Plumley, R

VIRGINIA

- | | |
|--------------------------------|------------------------------|
| 1. Schuyler Otis Bland, D | 5. Thomas G. Burch, D |
| 2. Colgate W. Darden, Jr., D | 6. Clifton A. Woodrum, D |
| 3. Dave E. Satterfield, Jr., D | 7. A. Willis Robertson, D |
| 4. Patrick H. Drewry, D | 8. Howard W. Smith, D |
| | 9. John W. Flannagan, Jr., D |

WASHINGTON

- | | |
|--------------------------|------------------------|
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| 2. Monrad G. Wallgren, D | 5. Charles H. Leavy, D |
| 3. Martin F. Smith, D | 6. John M. Coffee, D |

WEST VIRGINIA

- | | |
|--------------------------|-------------------------|
| 1. Andrew C. Schiffer, R | 4. George W. Johnson, D |
| 2. Jennings Randolph, D | 5. John Kee, D |
| 3. Andrew Edmiston, D | 6. Joe L. Smith, D |

WISCONSIN

- | | |
|--------------------------|---------------------------|
| 1. Stephen Bolles, R | 6. Frank B. Keefe, R |
| 2. Charles Hawks, Jr., R | 7. Reid F. Murray, R |
| 3. Harry W. Griswold, R | 8. Joshua L. Johns, R |
| 4. John C. Schafer, R | 9. Merlin Hull, P |
| 5. Lewis D. Thill, R | 10. Bernard J. Gehrman, P |

WYOMING

Representative at Large: Frank O. Horton, R

In the Senate the leadership of the Democratic majority's stalwart group continued with Barkley of Kentucky. Vandenberg of Michigan remained leader of the Republican minority; Glass of Virginia continued as chairman of the Senate's committee on appropriations; Pittman of Nevada, to head that on foreign relations; and Harrison of Mississippi, that on finance. In the House of Representatives, William B. Bankhead, Representative from Alabama, was again chosen for Speaker, McReynolds of Tennessee held the chairmanship of the House's committee on foreign affairs, and Doughton of North Carolina, that of the committee on ways and means. In place of Snell of New York, no longer a member, the Republicans chose Joseph W. Martin, Jr., of Massachusetts, for minority leader. Rayburn of Texas remained majority leader of the House.

For legislation, see UNITED STATES under *Legislation*.

CONGRESS OF INDUSTRIAL ORGANIZATIONS. The Congress of Industrial Organizations continued to grow numerically and in influence during the year 1939. Founded in November, 1935 by the presidents of eight unions, with less than one million members, the C.I.O. was able to report to its second constitutional convention in San Francisco, Oct. 10, 1939, a four-fold growth in membership. With 45 national and international unions and organizing committees affiliated, 210 state, county, and city Industrial Union Councils and 567 directly affiliated Local Industrial Unions, a total membership of approximately four million was represented. See AMERICAN FEDERATION OF LABOR; COMMUNISM; LABOR CONDITIONS; LABOR LEGISLATION; RELIEF.

The two most important meetings of the Congress of Industrial Organizations during 1939 were the Executive Board meeting held in Washington, D. C., June 13-15, and the second constitutional convention held in San Francisco, Calif., October 10-13.

The Executive Board meeting heard reports on the activities of the executive officers and of the C.I.O. committees on legislation, unemployment,

social security, and housing. It adopted a program for expanding organizing activities and for legislation to cope with unemployment and insecurity, and decided to launch a national campaign for pensions of \$60 a month at 60 years of age, and \$90 for married couples.

Progress. The progress of the Congress of Industrial Organizations during the year was summarized in the report of the President to the convention in San Francisco. This report noted many organizational and legislative advances during the year. "The CIO has held its own and maintained its ranks through a long period of bitter unemployment and in face of the most vicious and concentrated attacks of its enemies," it stated. "More than this, it has not only held its own, but it has also made many organizational advances in industries where it was already established and has pushed forward into new fields."

"The economic strength of the CIO has been reflected in increased political influence, which the CIO has used in recent elections and in the last session of Congress to strike many a blow in the cause of liberalism and progress. The CIO has used its political influence to defend existing labor and social legislation; to demand the enactment of new legislation in the interests of labor, the unemployed, the farmers, and the great masses of the people; and to protect and expand our democratic liberties."

The President's report to the San Francisco convention noted the victory of the United Mine Workers of America in winning the union shop for 600,000 coal miners, and making that organization more powerful than ever before in its history, as one of the major achievements of the C.I.O. during the year.

It also referred to the fact that the Amalgamated Clothing Workers of America had reached the peak of its strength during the year, "with renewed agreements bringing many improvements, with increased membership, and with a record of constructive contributions to the welfare of this industry and the workers employed in it."

The success of the C.I.O.-United Automobile Workers of America in defeating a dual movement sponsored by the American Federation of Labor was another achievement noted. The C.I.O. unions during the year won a series of elections by overwhelming majorities. These included an election at the Chrysler Corporation plants in which it received 40,564 votes, as against 4673 for the A. F. of L.; an election at the Briggs Manufacturing Company, in which the C.I.O. union received 13,301 votes, while the A. F. of L. union got only 1052; and similar large election majorities for the C.I.O. at the Packard, Motor Products, Kelsey-Hayes, and other plants.

The Steel Workers Organizing Committee also made great progress during the year, and was able to report to the San Francisco convention 614 corporation-wide and company collective bargaining agreements covering the conditions of some 625,000 workers employed in the industry. The number of its local lodges rose to 1200 during the year; and it was estimated that since its formation, the SWOC had won annual wage increases amounting to about 287 million dollars for the steel workers of the country.

The Textile Workers Organizing Committee of the C.I.O. merged with the United Textile Workers at a joint convention in May, 1939, forming a new international union, the Textile Workers Union of America. This organization also won

many elections and new agreements during the year, reporting to the C.I.O. convention a total of more than 1100 signed collective bargaining agreements, covering over three hundred thousand workers.

Among the newer C.I.O. unions, the Packinghouse Workers Organizing Committee made notable progress during 1939 in organizing the unorganized. Having won scores of agreements from independent packers, it won a series of election victories during the year at the plants of some of the biggest companies, and was certified as the workers' collective bargaining agent in all the major plants of Armour & Company.

Two consolidations of C.I.O. unions took place during 1939. The National Leather Workers Association merged with the Fur Workers International Union to form the Fur and Leather Workers International Union, which has since launched a drive to organize the unorganized workers throughout the industry. Several units of the United Fishermen's Union of the Pacific merged to become the International Union of Fishermen and Allied Workers of America.

The C.I.O. entered a new field during the year by setting up the United Construction Workers Organizing Committee on Aug. 1, 1939, for the purpose of organizing all workers in and around the construction industry without regard to creed, race, or nationality. The new committee consists of A. D. Lewis, chairman, Philip Murray, James B. Carey, S. H. Dalrymple, and R. J. Thomas. The number of local charters issued by the new organization had increased to 80 by the end of the year and a number of contracts had been won with building contractors.

Besides the unions mentioned, all other C.I.O. organizations reported considerable organizing progress during the year, as indicated by increases in membership, Labor Board election victories, and many new collective bargaining agreements.

The President's report also stated that in the past year the C.I.O. had won more Labor Board elections than any other group and had received more workers' votes than all other unions combined.

In regard to legislative achievements, it stated that in the past session of Congress "the CIO led the fight for progressive legislation and was the backbone of the liberal resistance to attacks on existing social legislation." It noted that "CIO efforts were effective in preventing emasculating amendments to the National Labor Relations Act and the Wage-Hour Law, and preventing even worse slashes than were made in the WPA program."

Purposes. The objects of the Congress of Industrial Organizations were outlined in the constitution first adopted at the Pittsburgh convention in November, 1938, and were reaffirmed at the 1939 convention as follows:

First: To bring about the effective organization of the working men and women of America regardless of race, creed, color, or nationality, and to unite them for common action into labor unions for their mutual aid and protection.

Second: To extend the benefits of collective bargaining and to secure for the workers means to establish peaceful relations with their employers, by forming labor unions capable of dealing with modern aggregates of industry and finance.

Third: To maintain determined adherence to obligations and responsibilities under collective bargaining and wage agreements.

Fourth: To secure legislation safeguarding the economic security and social welfare of the workers of America, to protect and extend our democratic institutions and

civil rights and liberties, and thus to perpetuate the cherished traditions of our democracy.

The San Francisco convention declared that continued organization of the unorganized workers was "the primary purpose of the CIO," unanimously adopting the following resolution:

Whereas, (1) The self-organization of American workers into modern labor unions, capable of dealing with the vast combines of industry and capital, is the fundamental and unalterable purpose of the CIO, the cornerstone of its economic, legislative and cultural activities, and the very reason for its being; and

(2) During the last two years of adverse economic conditions the CIO has forged steadily ahead with its all-important organizing work and has met with a success which augurs well for the results to be achieved during the period of more promising economic circumstances which lies directly ahead; now, therefore be it

Resolved, That the primary purpose of the CIO during the months and years immediately before us, as in the past, must be the advancement of the basic task for which the CIO was created and to which it is dedicated, the organizing of the unorganized millions of American workers on an industrial basis.

Among other important actions taken at the San Francisco convention was a resolution on labor and the European war, in which it was resolved:

(1) That labor wants no war nor any part of it and while countries in Europe are engaged in their barbaric orgies of conquest and aggression as they have been doing for centuries, it must ever be the purpose of the United States to remain out of these wars, and

(2) That the CIO offers its support to President Roosevelt's neutrality policy based upon the cardinal principle of keeping America out of war and calls for further legislation to take the profits out of war business by rigorous taxation of excess profits and surplus incomes; and

(3) That this Second Annual Convention of the CIO declares in no equivocal terms that we will defend the free institutions of this Republic, the greatest democracy on earth, under the Declaration of Independence and the Constitution, a government of the people, for the people and by the people. It shall ever be our purpose as Americans to defend our country and our free institutions against foreign invasion; and

(4) The CIO will devote itself to continuing the organization of the unorganized American workers, promoting genuine collective bargaining, for the welfare of American labor and the stabilization of industry, and, through the preservation of peace, find a solution of the basic economic ills of this country and bring about a permanent prosperity. By these efforts we shall prove to the world that the United States is the highest form of democratic government on earth and set the example of the effectiveness of democratic government in promoting life, liberty and happiness for mankind.

Legislative Issues. The San Francisco convention took action on all major legislative issues affecting the labor movement, and its policies were embodied in a legislative program for 1940, which was adopted at a meeting in Washington, Dec. 15, 1939, of the C.I.O. legislative committee, consisting of John L. Lewis, chairman, Philip Murray, Sidney Hillman, R. J. Thomas, S. H. Dalrymple, Reid Robinson, Emil Rieve, James Carey, and Lee Pressman, secretary.

The legislative purposes of the C.I.O. are summed up in the following paragraphs from the program:

The people of this country, whenever the occasion has presented itself, have strongly and pointedly demonstrated their desire to continue and extend the gains and benefits of the social legislation enacted during the past few years. There can be no retreat now, rather there must be a steady forward march to extend the social and economic program of the nation.

At the present time, the nations in Europe and Asia are convulsed by international warfare. Democratic institutions and civil liberties in those nations have been abolished. Labor in those countries has been compelled to carry the brunt of the wartime burdens; unions there are facing virtual extinction. Unfortunately, the time and energy of our own Government representatives during the past few months have been devoted almost exclusively to international affairs at the expense of the interests and needs of the American people at home.

Today the American problem No. 1 is still the problem of the 9 to 10 million employable men and women who are without jobs in private industry. In spite of a most extensive acceleration of business activity during the past few months, the huge number of unemployed remains undiminished. These millions of unemployed men and women are ready subjects to the wiles of the demagogues who actually desire to undermine and destroy our democratic institutions.

The CIO urges for the serious consideration by the Federal Congress a legislative program based upon certain fundamental objectives:

- (1) the United States must keep out of any involvement in the foreign wars;
- (2) the attention of this country and the energies of our Government, industrial and labor leaders of this country, must be directed toward the immediate solving of the problem of unemployment;
- (3) the democratic rights and institutions of this country must be preserved and maintained;
- (4) there must be continued assurance and protection of the rights of labor to organize and bargain collectively as the cornerstone for the preservation and extension of any economic and social program.

The legislative program of the C.I.O. recommended that the President of the United States convene a conference of representatives of Government, industry, labor, and agriculture to work out concrete plans to solve unemployment; and that pending such conference and solution Congress should appropriate sufficient funds for public works to provide jobs for at least three million men and women.

In regard to the nation's youth problem, the C.I.O. program called for a program of public works appropriations, contributing to the needs of youth and to the public welfare, sufficient to employ all young people who are out of work and out of school.

The C.I.O. legislative committee took note of two serious difficulties that have risen in connection with the National Labor Relations Act, as follows:

In the first place, the enforcement provisions of the Labor Act are not sufficiently severe to actually obtain enforcement from those corporations which are still determined to violate the rights of labor.

In the second place, the National Labor Relations Board, in an attempt to appease the reactionary interests, including the leaders of the American Federation of Labor, has issued decisions which have threatened the existence of the industrial unions of the CIO by carving out crafts in industrial plants organized by the CIO.

The C.I.O. program therefore called for three amendments to the National Labor Relations Act:

1. A provision which will provide for criminal penalties to be imposed upon any employer found to have violated any of the provisions of the National Labor Relations Act. This will bring the National Labor Relations Act into line with the provisions of the Fair Labor Standards Act and the Railway Labor Act, violation of which permits the imposition of criminal penalties.
2. A provision which will prevent the Government from awarding any Government contracts to any employer found to have violated the National Labor Relations Act. At the present time the most reactionary and vicious anti-labor corporations such as Bethlehem Steel, Douglas Aircraft, and Standard Oil Company of New Jersey, are the most frequent beneficiaries of Government contracts while they are actually violating the labor law of the land.
3. A provision which will prevent the National Labor Relations Board from carving up any industrial units established by the industrial unions of the C.I.O.

Passage of the LaFollette-Thomas Oppressive Labor Practices Act was asked, to outlaw the use of industrial spies and the purchase of munitions by private corporations.

In regard to the Fair Labor Standards Act, the C.I.O. called upon Congress not to pass any amendments which would exclude groups of exploited workers from its benefits. On the contrary, it urged larger appropriations for administrative expenses to assure real enforcement, and stated that, after the Act has had a chance to

operate, Congress should extend the benefits of the legislation to the millions of workers who are still deprived of its protection.

In regard to social security, the C.I.O. legislative program asked that the provisions for old age and unemployment compensation be expanded, simplified, and liberalized through Federal action. It again advanced the C.I.O. pension program for pensions of \$60 a month at the age of 60 and an additional allowance of \$30 to aged wives.

The C.I.O. also called for an expanded public health and industrial hygiene program, and for expansion of Government housing activities. It urged that at least one million new housing units be built each year, of which the Government, in order to stimulate private builders, must provide at least 300,000.

In regard to taxation, the C.I.O. program pointed out that labor and consumer groups have been bearing the brunt of increased expenses, social welfare, and national defense. It urged that the present tax burden upon consumer groups and wage earners be substantially reduced; and that a far greater proportion of total tax revenue be derived by tapping the large concentrations of wealth and surplus profits.

Origin. The C.I.O. was first established in November, 1935, under the name of the Committee for Industrial Organization, by the presidents of eight international unions of the American Federation of Labor. Its purpose was declared to be "to encourage and promote organization of the workers in the mass production and unorganized industries of the nation and affiliation with the American Federation of Labor."

In August, 1936, however, the executive council of the A. F. of L., meeting in Washington, ordered the C.I.O. unions to disband their committee and discontinue their organizing activities, under penalty of suspension from the Federation. This suspension went into effect in September, 1936, and thereafter the committee continued its organizing activities independently of the A. F. of L.

In November, 1938, the Committee for Industrial Organization held a convention in Pittsburgh, Pa., to establish the new movement on a permanent basis. It adopted a constitution and changed its name to the Congress of Industrial Organizations.

Officers. Officers of the Congress of Industrial Organizations elected at its 1939 convention are as follows: President, John L. Lewis, president of the United Mine Workers of America. Vice Presidents: Philip Murray, chairman of the Steel Workers Organizing Committee; Sidney Hillman, president of the Amalgamated Clothing Workers of America; R. J. Thomas, president of the United Automobile Workers of America; S. H. Dalrymple, president of the United Rubber Workers of America; Reid Robinson, president of the International Union of Mine, Mill & Smelter Workers; Emil Rieve, president of the Textile Workers Union of America. Secretary, James B. Carey, president of the United Electrical, Radio & Machine Workers of America. Headquarters of the Congress of Industrial Organizations are located at 1106 Connecticut Avenue, N. W., Washington, D. C.

JOHN L. LEWIS.

CONNECTICUT. Area and Population. Area, 4965 square miles; included (1930) water, 145 square miles. Population: Apr. 1, 1930 (census), 1,606,903; July 1, 1937 (Federal estimate),

1,741,000; 1920 (census), 1,380,631. Hartford, the capital, had (1930) 164,072 inhabitants; New Haven, 162,655.

Agriculture. Connecticut harvested, in 1939, 444,700 acres of principal crops. Three-fourths of this, or 343,000 acres, bore 412,000 tons of tame hay (estimated farm value, \$6,716,000); tobacco, using little land but important in its high monetary return, gave from 17,200 acres 25,590,000 pounds (\$10,442,000); potatoes, on 17,500 acres, 3,238,000 bushels (\$3,238,000); corn, 50,000 acres, 1,950,000 bushels (\$1,384,000); apples yielded 1,030,000 bushels gathered for market (\$978,000).

Manufacturing. Establishments in Connecticut, engaged in manufacturing, numbered 2892 in 1937 (in 1935, 2820); employed 262,620 wage-earners (in 1935, 223,041); and paid, in wages, \$312,269,732 (in 1935, \$226,253,427). They produced goods to the total of \$1,261,788,693 (in 1935, \$899,401,096). The greater part of the total yearly value of the output was contributed by the processes in these manufacturing, as distinct from cost of materials. In 1937, \$680,787,099 (in 1925, \$491,483,051) was the sum of value added to materials by manufacture. A characteristic of industry in the State, the prevalence of a sort of production greatly dependent on the efforts of the worker rather than on automatic processes, appeared in the high ratio, 45 per cent, of the total wages paid to the value added by manufacture. The making of brass and other non-ferrous metal alloys, while not typical in all these respects, was an outstanding industry, using 22,210 wage-earners and producing goods to the value of \$155,725,947 in 1937; the production of electrical machinery, apparatus, and supplies engaged 16,741 wage-earners and attained \$96,512,785 of output. Among the lines of production most characteristic of the State were: machine-shop products, to the total of \$65,095,295; hardware (outside of separately listed sorts), \$48,305,548; machine tools, \$29,115,574; fur-felt hats, \$28,458,885; typewriters and parts, \$22,794,956; silverware and plated ware, \$20,026,822; clocks, watches, and parts, \$21,289,104; and cutlery, \$18,383,096.

Bridgeport had 34,747 wage-earners in factories and produced \$178,066,597; Hartford, 26,572, \$109,147,153; Waterbury, 23,752, \$120,389,265; New Haven, 22,260, \$106,502,599. Each of 13 among the cities manufactured goods in excess of \$20,000,000.

Education. Connecticut's inhabitants of school age were accounted, for the year ended June 30, 1939, as 320,555, from 4 to 16 years of age. The year's enrollments of pupils in public schools totaled 296,888; this comprised 15,589 in kindergartens, 178,809 in elementary schools, 24,821 in junior high schools, and 77,669 in high schools. The year's expenditures for public-school education totaled \$31,394,411.

Legislation. The regular biennial session of the General Assembly, which convened in January, ended only on June 8, having spent weeks in partisan dispute over rival proposals for a law to forbid the appointment of legislators to remunerated posts in the State government during the terms for which they had been elected. The State's ratification of the Bill of Rights (ten original amendments of the Federal Constitution) was voted, 148 years after adoption by the Union; this action, while not the result of any obvious necessity, was promoted by the Democratic group in both houses and allowed to pass. Governor Baldwin's desire to do away with the State's inspection

of automobiles was followed only in part: the two chambers failed to agree on a measure to abolish the inspectors, but the exclusion of an appropriation for their work left it possible for the inspection to be suspended. The Legislature authorized the construction of the Wilbur Cross Parkway, a road similar in character to the Merritt Parkway and extending up the valley of the Connecticut River to Hartford; the same enactment authorized the State's Highway Department to levy toll on the completed part of the Merritt Parkway; proceeds were to build up a fund for extending the Parkway over the Housatonic River and beyond, to a junction with the proposed Wilbur Cross Parkway.

Dealing with demand for the reform of the municipal government of Waterbury, an enactment authorized that city to hold an election on a referendum proposing the direction of affairs by a city manager.

Political and Other Events. Gov. Raymond E. Baldwin took office January 4. He had served in the Navy, gaining the rank of Lieutenant in 1918; had graduated at the Yale Law School; had practised law at Bridgeport for 15 years; and had been Republican floor leader in the lower house of the General Assembly.

Waterbury Trials. The year's most conspicuous political event was the trial and conviction, August 16, for conspiracy to defraud Waterbury, of Mayor Frank Hayes (Democrat); he had served as Lieutenant-Governor for two terms of the administration of Governor Cross. Indictments had been brought in 1938; 26 others had been indicted with Hayes; they were largely officers, actual or former, of the city, employees in its service, and men who had worked with them in corrupt transactions; two Republican politicians were among the number. Besides Hayes, 19 were convicted; 3 pleaded guilty; and 3 were freed by court order. The trial judge, Ernest A. Inglis of the Superior Court, sentenced Hayes to prison for not under 10 nor over 15 years; Daniel J. Leary, former City Comptroller, received a like sentence; lighter penalties were imposed on 20 others.

The convicted men were alleged to have bled Waterbury of \$1,000,000 or more in the course of numerous transactions between 1930 and 1938. The State's case against them was established by the evidence of the city's accounts and the testimony of persons, of whom many had been privy to some of the asserted deals. Hayes became Mayor in 1930, promising to give a businesslike administration and cut the local tax rate. He had obtained from the Legislature an increase of his mayoral authority; an issue of \$2,000,000 in municipal bonds for the cost of local aid to the activity of the WPA was said to have been used as a source of unduly profitable payments to some contractors. Two Waterbury newspapers, the *Republican* and the *American*, campaigned against the Hayes regime, and in the election of 1937 its former majority of about 7000 dropped to a scant lead, Comptroller Leary, indeed, being defeated by a margin of 33 votes. The new Comptroller, Sherwood L. Rowland, on entering office found in the city's accounts matters warranting the grand jury's investigation and indictments, which followed.

After the trial of Hayes and his associates a motion in the city's Board of Aldermen, to remove from their posts Mayor Hayes and his executive secretary, T. P. Kelly, was defeated by the Democratic minority, whose opposition kept the vote

short of the required two-thirds for removal (August 24); the defendants' motion for appeal was pending at the time; both resigned some days later. At a special election held October 3, the popular vote of Waterbury decisively defeated a referendum, held under authorization from the General Assembly, on a proposal to drop the charter's provision for a mayor of extensive authority and adopt instead a city manager. The vacancy left by the resignation of Hayes was filled by popular election, November 14; another Democrat, Vincent A. Scully, was elected mayor by a plurality of about 2384.

Other Events. The prosecution of two physicians and a nurse on the charge of giving advice about contraceptives at a maternal health clinic, the Chase Dispensary of the Waterbury Hospital, in violation of the State's law on birth control was dismissed (August 7) by a decision of the Superior Court; the court held this law defective in failing to allow proper exceptions to restrictions put on physicians, whom it found entitled to prescribe according to the requirements of patients' health.

The Merritt Parkway imposed a toll of 10 cents on each automobile passing a station fixed near the connection with the Westchester (N. Y.) County parkway system; toll taken on the first day (June 21) amounted to somewhat less than \$1000.

Bridgeport elected Jasper McLevy, Socialist, to his fourth consecutive term as mayor (November 7); he received a plurality of about 12,467 votes, more than the whole vote for his nearest opponent, but only two-thirds of his own plurality of 1937. The first non-Socialist since 1933 was elected to the common council.

Officers. The chief officers of Connecticut, serving in 1939, were: Governor, Raymond E. Baldwin (Rep.); Lieutenant-Governor, James L. McConaughy; Secretary of State, Sara B. Crawford; Treasurer, Joseph E. Talbot; Comptroller, Fred R. Zeller; Attorney-General, Francis A. Pallotti; Commissioner of Education, Alonzo G. Grace.

CONNECTICUT COLLEGE. A liberal college of arts and sciences for the higher education of women in New London, Conn., chartered in 1911 by the State of Connecticut and opened for instruction in 1915. The enrollment for the autumn of 1939 is 748. The faculty numbers 80 full-time members. The productive funds amount to \$1,361,261, and the budget for the year is \$749,300. There are 83,341 accessioned volumes in the library. In 1938-39 the college received total gifts amounting to \$472,632, for buildings, scholarships, etc. Buildings under construction during the year were: The Frank Loomis Palmer Auditorium, a bequest from the will of the late Virginia Palmer of New London; the Harkness Chapel, a gift of Mrs. Mary Stillman Harkness of New York; Frederic Bill Hall, a new academic building containing laboratories for psychology and physics, studios for fine arts, and a modern lecture room for general use, built with the bequest of Mrs. Frederic Bill of Groton; Emily Abbey House, a co-operative dormitory especially planned for the living and working of 26 self-supporting young women, the gift of Mrs. Emily Abbey Gill of Springfield, Mass.; Faculty Apartment House, an anonymous gift providing homes for four members of the faculty; reconstruction of the power house. Beginning with the Class of 1939, a final general ex-

amination in the major subject is required for graduation. The development of individual work is also an important part of the program. Through the recent gift of Mrs. Beatrice Fox Auerbach of Hartford, a major for students interested in business, especially retailing, was added in the fall of 1939. President, Katharine Blunt, Ph.D., LL.D.

CONSCRIPTION. See AUSTRALIA, CANADA, and GREAT BRITAIN under *History*.

CONSERVATION. See CIVILIAN CONSERVATION CORPS; FISHERIES, BUREAU OF; FORESTRY; GENERAL LAND OFFICE; NATIONAL RESOURCES PLANNING BOARD; SOILS.

CONSOLIDATED EDISON CO. See NATIONAL LABOR RELATIONS BOARD.

CONSTRUCTION. See BUILDING; BUSINESS REVIEW.

CONSUMER CO-OPERATIVE SOCIETIES. See CO-OPERATIVES.

CONSUMER GOODS. See BUSINESS REVIEW.

CONSUMER INCOMES. See LIVING COSTS AND STANDARDS.

CONTRACT BRIDGE. See SPORTS.

CONTRACTS. See LAW under *Private Law*.

CO-OPERATIVES. Consumers Co-operative societies in the United States doubled in number between 1933 and 1936, according to the latest (1938) U.S. Department of Labor Survey—from 188 to 3600, with a corresponding increase in members from 328,278 to 677,750. These Associations were doing an annual business of \$182,685,000. They included 2400 co-operative store associations with 330,500 members and a business of \$107,250,000; 1150 co-operative petroleum associations with 325,000 members and a business of \$69,985,000, and 50 other distributive associations with 22,250 members and business of \$5,450,000.

The typical American co-operative is said to have a membership of from 100 to 250 members. Associations handling petroleum products are mostly in the Mississippi Valley. States with the largest number of co-operatives are Minnesota, Wisconsin, Kansas, Illinois, and Nebraska. Probably two-thirds of total purchases by consumer co-operatives is concentrated in the North Central States.

Although no complete statistics are available, the movement is known to have grown rapidly in 1938 and 1939. According to reliable estimates at the end of 1939 more than 2,000,000 consumers were members of co-operatives doing an annual business of \$600,000,000.

Among the newer co-operative factories and other production units started in 1939 are: a \$750,000 petroleum refinery at Phillipsburg, Kans.; a \$250,000 refinery at Regina, Saskatchewan, Canada; an oil topping and cracking plant at Mount Vernon, Ind.; flour mills at Auburn, Ind., and Outlook, Sask.; feed mills at Manheim, Pa., and Superior, Wis.; commercial fertilizer factories and mixing plants at Baltimore; Indianapolis; Alliance, Ohio; and Maumee, Ohio; a new co-operative cold storage locker plant in Champaign, Ill. A group of co-operatives and credit unions in Indiana purchased a bank in July.

The Co-operative oil refinery in Kansas, capacity 3000 barrels a day, a \$750,000 plant, is the outgrowth of a movement started in 1929 by a group of farmers in and near North Kansas City, Mo., who started a service to six local co-operative gas and oil associations and grew to a \$4,000,000 business in 1938. In all sections of the

United States consumer co-operatives handle approximately \$110,000,000 worth of petroleum products a year.

Co-operative distribution of groceries grew notably in eastern cities when the Eastern Co-operative Wholesale, serving two hundred co-operatives from Maine to Maryland, reached a sales volume of \$1,000,000, as compared with \$533,000 in 1937, and \$717,000 in 1938. An unusual development was the creation of a co-operative chain of eighteen grocery stores in southern Minnesota and Wisconsin which combine the efficiency of chain store operation with the advantages of co-operation. American grocery co-operatives adopted a uniform CO-OP label and adopted government ABC-grade labeling of commodities.

A chain of eight co-operative cafeteria restaurants in New York City, with about 5000 members, are doing business of about 450,000 a year, and serving about a million meals.

Distribution of farm supplies continued to grow. The Farm Credit Administration estimated co-operative purchases at \$440,000,000, one eighth of all United States farm supply purchases.

Co-operative insurance companies handling fire, automobile, and life insurance showed increases of from 18 to 27 per cent for the year. Co-operative credit unions continued to grow throughout the year, reporting 8500 credit unions in the United States having a total membership of 2,225,000. These credit union co-operatives have assets well over \$110,000,000.

Insurance conventions in Boston, Oakland, Indianapolis, Little Rock, and White Sulphur Springs passed resolutions condemning the consumer co-operative movement on the ground that it "aims to increase prices to producers," "to cut prices to consumers," and "establish economic democracy."

B. P. ADAMS.

COPPER. World production, consumption, markets, and prices of this commodity in 1939 were affected primarily by the war economy of Europe, with respect to foreign producers, and by general business conditions in the United States for the domestic industry. In general the year showed a higher degree of activity both at home and abroad than in 1938. World production statistics for 1939 are not available, due to interruption of communications by the war in Europe.

Summary of United States duty-free statistics reported by the members of the Copper Institute are given in the accompanying table. They show increased production and shipments in 1939 over 1938, but a decrease in refined stocks at the year-end.

	1938 (short tons)	1939 (short tons)
Production		
Crude.....	644,869	836,371
Refined.....	638,076	818,289
Deliveries		
Domestic.....	481,803	814,407
Export.....	125,869	134,152
Refined stocks.....	289,755	159,485

Mine production of recoverable copper in the United States in 1939 was about 722,700 short tons, according to preliminary figures of the Bureau of Mines. The output for 1938 was 557,763 tons, indicating an increase in 1939 of 30 per cent. Value of 1939 production was \$150,321,600, compared with \$109,321,466 in 1938. The accompany-

ing table gives mine production of copper in short tons of recoverable metal, 1938-39.

State or Territory	1938	1939*	% change in 1939
Alaska.....	14,549	165	- 99
Arizona.....	210,797	259,200	+ 23
California.....	806	4,207	+422
Colorado.....	14,171	13,414	- 5
Idaho.....	2,139	2,375	+ 11
Michigan.....	46,743	44,000	- 6
Montana.....	77,213	98,555	+ 28
Nevada.....	46,169	65,415	+ 42
New Mexico.....	20,439	45,913	+125
Oregon.....	38	47	+ 24
Texas.....	16	20	+ 25
Utah.....	108,126	170,520	+ 58
Washington.....	6,017	8,932	+ 48
Eastern States ^b	10,540	9,937	- 6

* Preliminary figures.

^b 1938: Georgia, North Carolina, Pennsylvania, South Carolina, Tennessee, and Virginia. 1939: Same States except Georgia and South Carolina.

Copper output in Canada increased 6 per cent in 1939 over 1938, amounting to 606,705,278 lb.

The domestic price for refined electrolytic copper, Connecticut Valley, ranged from 11¼¢ per lb. in January down to 10¢ in June, and up again to 12½¢ from October to the year end, according to *Engineering and Mining Journal*. The annual average price for 1939 was 10.965¢. London prices pursued a similar course until early in September, when the Metal Exchange was closed to trading, and Great Britain practically commandeered copper from Empire producers at a price of £51 per long ton, or about 9¢ per lb. On December 18 the British Ministry of Supply announced a price to consumers of £62 per long ton, equivalent to about 11¢ per lb., on account of the heavy cost of delivery to England from Empire producing countries. No change was made in price to producers.

Consequent on the closing of the London Metal Exchange, the f.a.s. dollar basis, New York export price reflected the open market abroad, rising to 12.90 @ 12.95¢ in November and closing the year at 12.40¢.

Copper and brass fabricators experienced an encouraging recovery of business during the last half of 1939 in marked contrast to conditions prevailing earlier in the year. For the entire year the sales of copper and its alloys increased nearly 50 per cent over 1938, according to the Copper & Brass Research Association. An all-time record was made in the sale of brass pipe and copper water tube for plumbing purposes, in spite of the fact that building construction did not approach previous high records. The principal uses of copper, in order of importance are: electrical manufactures, wire and cable, automobile, light and power lines. See BUSINESS REVIEW; METALLURGY.

On Dec. 21, 1939 the State Department announced in Washington that it had abandoned its announced intention to consider reduction of the import tax of 4¢ per lb. of copper in negotiating the reciprocal trade treaty with Chile.

H. C. PARMELEE.

COPTS. See EGYPT; ITALIAN EAST AFRICA. **COPYRIGHT.** Registrations for the fiscal year 1938-39, according to the report of the U.S. Register of Copyrights, numbered 173,135, as compared with 166,248 for the preceding year. Of these 59,744 were classed as books, but included pamphlets, leaflets, and contributions in periodicals. Those printed in the United States numbered 54,536, those printed abroad in a foreign language,

4086, while the remainder, 1122, were English books registered for ad interim copyright. The chief classes of the remaining registration were: Periodicals (numbers), 38,307; musical compositions, 40,961; dramatic or dramatico-musical compositions, 6800; works of art, models, or designs, 3419; drawings or plastic works of a scientific or technical character, 2863; photographs, 3150; prints and pictorial illustrations, 3126; maps, 1566; lectures, sermons, addresses, 1135; motion pictures not photoplays, 932; motion-picture photoplays, 825; reproductions of works of art, 130. The renewals numbered 10,177 as compared with 9940 in the preceding year. The fees applied during the year amounted to \$306,764. The total number of articles deposited during the fiscal year ended June 30, 1939, was 263,937. The gross receipts of the Register's office for the fiscal year were \$330,466; the total expenditures for salaries, \$266,737, and for supplies, \$1930.

CORN. The corn crop of the United States in 1939 was estimated at 2,619,137,000 bu., 2.2 per cent larger than the 1938 crop of 2,562,197,000 bu. and compared with the 1928-37 (including three drought years) average of 2,309,674,000 bu. The total acreage harvested for all purposes was 88,803,000 acres compared with 92,222,000 acres in 1938, 11 per cent below the 10-year average of 99,798,000 acres, and was the smallest acreage in 41 years. The decrease was attributed to low acreage allotments established by the AAA, low prices, and a large carry-over. Yield per harvested acre averaged 29.5 bu., the highest since 1920, versus 27.8 bu. in 1938, due to favorable conditions in five Corn Belt States resulting from larger acreages of high-yielding hybrids, restriction of corn to more fertile land, favorable growing and maturing weather, and increased use of power machinery. Corn grown for grain was estimated at 2,360,060,000 bu., the 4,243,000 acres harvested for silage produced 31,195,000 tons of silage, and the rest of the crop, about 5,699,000 acres, was harvested for forage or grazed by livestock. States leading in production of corn for grain were Iowa 481,572,000 bu., Illinois 404,404,000, Indiana 204,867,000, Minnesota 167,132,000, Ohio 161,800,000, and Missouri, 118,531,000 bu. Wisconsin, Minnesota, New York, Pennsylvania, and Iowa led in order in silage production. The season average price per bushel received by farmers was 55.9¢ in 1939 and the value of production was estimated at \$1,464,309,000 versus 50.4¢ and \$1,290,423,000 in 1938. See AGRICULTURAL ADJUSTMENT ADMINISTRATION; *Crop Production in 1939* under AGRICULTURE; COMMODITY CREDIT CORPORATION.

HENRY M. STEECE.

CORN BORER. See ENTOMOLOGY, ECONOMIC.

CORNELL UNIVERSITY. A nonsectarian institution for the higher education of men and women in Ithaca, N. Y., founded in 1865. There were 6949 students enrolled in the autumn of 1939, distributed as follows: Graduate school, 853; law school, 207; medical college, the main division of which is in New York City, 292; arts and sciences, 1757; architecture, landscape architecture, and fine arts, 141; engineering, 1236; veterinary medicine, 164; agriculture, 1621; and home economics, 782, including 310 in hotel administration. Of these students, 1499 were women. The 1939 summer session registration was 2062. The faculty, composed of 1691 members, had 50

professors emeritus, 318 professors, 273 assistant professors, 23 lecturers and associates, 464 instructors, and 563 assistants. The productive funds on June 30, 1939, amounted to \$30,872,433. The income applicable to current expenses was approximately \$9,896,038, including \$3,285,431 of State and \$869,540 of Federal appropriations. Gifts amounting to \$1,009,458 were received during the fiscal year. The land and buildings were valued at \$19,692,680, and the equipment at \$8,200,950. The library contained 1,036,404 volumes. President, Edmund Ezra Day, Ph.D., L.L.D. See PHOTOGRAPHY.

CORPORATE REORGANIZATIONS.

See BUSINESS REVIEW.

CORPORATIVE STATE. See CZECHOSLOVAKIA, ESTONIA, GERMANY, GREECE, ITALY, LATVIA, LITHUANIA, PORTUGAL, RUMANIA, SPAIN under *Government and History*; FASCISM.

CORRUPTION IN GOVERNMENT.

See CONNECTICUT, KANSAS, LOUISIANA, MASSACHUSETTS, NEW YORK.

CORSICA. An island department of France, in the eastern Mediterranean, 100 miles south-east of Nice. Area, 3367 square miles; population (1936 census), 322,854. Capital, Ajaccio.

COSMETICS. See FOOD AND DRUG ADMINISTRATION.

COSMIC RAYS. See PHYSICS.

COSTA RICA, kōs'tā rē'kā. A Central American republic. Capital, San José.

Area and Population. Area, 23,000 square miles; estimated population on Dec. 31, 1938, 623,414, largely of Spanish and other European descent except for some 18,000 Negroes in the Atlantic banana zone and about 3000 Indian aborigines. Passengers entering the country in 1938 numbered 8090; departures, 7674. Estimated populations of the chief towns in 1938 were: San José, 70,568; Cartago, 20,452; Limón, 16,699; Alajuela, 11,877; Heredia, 9828.

Education and Religion. The illiteracy rate among persons under 18 is very low. In 1938 there were 649 primary schools with 64,413 pupils, three secondary and normal schools with 1860 students, and two colleges. Roman Catholicism is the state religion.

Production. Coffee, bananas, and cacao comprised 84.5 per cent of the 1938 exports. Coffee exports amounted to 21,873,891 kilos (kilo equals 2.2 lb.); bananas, 5,033,424 stems; cacao, 5,533,016 kilos. Corn, rice, beans, sugar, fruits, and vegetables are grown for local consumption. Gold (\$554,393 exported in 1938) and salt are the only minerals produced. Manufacturing is confined to the production of a few articles for domestic use.

Foreign Trade. Total imports in 1938 were valued at \$12,620,721 (\$11,878,547 in 1937); exports, \$10,145,614 (\$11,512,097 in 1937). Of the 1938 imports the United States supplied \$6,194,856; Germany, \$2,496,216. Of the exports, the United States took \$4,628,438; United Kingdom, \$2,476,564; Germany, \$1,944,666. Values of the leading 1938 exports: Coffee, \$4,938,053; bananas, \$2,806,547; cacao, \$830,727.

Finance. Governmental revenues in 1938 were 37,491,407 colones; expenditures, 36,337,010, including 5,487,635 colones representing interest on the foreign debt. The ordinary budget for 1939 placed revenues at 30,750,000 colones and expenditures at 31,299,000. A decree of Sept. 8, 1939, provided for the continuance in 1940 of the 1939 budget. The public debt decreased from 144,439,734 colones on Dec. 31, 1937, to 138,639,712 on

Dec. 31, 1938. Average exchange rates of colon (1937 and 1938): Controlled, \$0.1779; uncontrolled, \$0.1770.

Transportation. Costa Rica has 413 miles of railways, 430 miles of roads and trails, and a domestic air network connecting with Pan American Airways. The government-owned Pacific Railway in 1938 carried 235,868 metric tons of freight and earned net profits of 1,615,310 colones. A total of 696 ships of 1,501,435 tons entered and cleared the ports in 1937.

Government. Executive power is vested in a president elected for 4 years and legislative power in a Congress of 44 members, half of whom are elected (for 4 years) every 2 years. President in 1939, León Cortés Castro (Republican National party), who assumed office May 8, 1936.

History. The campaign for the presidential election scheduled for February, 1940, got under way in earnest in 1939 after President Cortés Castro announced on January 31 that he would not seek re-election. The President and his Republican National party, representing Catholic and conservative groups, put forward as their candidate Dr. Rafael Angel Calderón Guardia, president of the Congress. On April 30 the 80-year-old statesman, Dr. Ricardo Jiménez Oreamuno, who had served three terms as President of the republic, accepted the nomination of the opposition liberal elements, but on May 21 he withdrew his candidacy due to "unneutral opposition on the part of the government" and lack of financial support. Four days later President Cortés Castro prohibited political demonstrations by all parties on the ground that they threatened to cause disorders.

On July 14 it was announced that all opposition groups, including the Communists, had agreed to unite behind a single candidate. Leaders of this National Democratic Alliance announced that their objective was to defend Costa Rica's democratic institutions against official infringements. The spread of Nazi and Fascist propaganda and influence and changes proposed in the laws governing elections and the press by President Cortés Castro on May 1 contributed to the unprecedented action of the opposition parties in forming an anti-government united front.

Other internal developments included the gradual elimination, under the decree of Mar. 25, 1939, of the coffee export tax imposed Dec. 22, 1937; imposition on March 10 of a customs surcharge of 100 per cent on imports from countries with which Costa Rica's balance of trade was unfavorable by more than 50 per cent during the preceding calendar year (aimed chiefly at Japan); suspension of service on the debt owed in France and continuance of negotiations for an adjustment of the private United States and British loans. The President in his message of May 1 to Congress reported that the banana concession granted the United Fruit Company in 1938 was resulting in rapid development of a hitherto unproductive and unpopulated region on the west coast.

With the support of the German colony in Costa Rica, the Reich continued its rapid commercial and political penetration previous to the outbreak of the European war in September. German interests undertook to exploit high-cost manganese ore deposits; organized a manila hemp industry; pressed the Costa Rican Government to improve the Puntarenas port works with German materials and technicians; pushed the aski mark

trading device so successfully that the Reich displaced Britain as the chief market for Costa Rican coffee; and won some success in replacing United States interests in the electric power and equipment business. On May 12 Herbert Knohr, the local Nazi leader, was shot and seriously wounded by a prominent Costa Rican Socialist leader, Vicente Sáenz.

Upon the outbreak of war, there were large anti-Nazi demonstrations in San José and other cities. Costa Rican coffee exports to the Reich virtually ceased. Some 2,500,000 marks worth of German goods sold to Costa Rican merchants on credit in anticipation of future coffee shipments were frozen. An active pro-German propaganda, re-inforced by the German colony's boycott of anti-Nazi publications and merchants and marked by efforts to induce the government to curb the local press, aroused much resentment among Costa Ricans.

Two Nicaraguan revolutionary leaders were expelled from Costa Rica during the year for making public attacks upon the Nicaraguan President and Government. Following his visit to the United States, President Somoza of Nicaragua with his wife, daughter and various government officials, visited Costa Rica in the middle of August for the purpose of seeking an agreement with the San José government on the Nicaraguan-United States project for canalization of the San Juan River as the first step toward another inter-ocean canal. The Nicaraguan Foreign Minister returned to San José late in October to continue the negotiations, which had encountered difficulties.

See HONDURAS and NICARAGUA under *History*.
COSTIGAN, EDWARD P (RENTISS). An American lawyer and ex-Senator, died in Denver, Jan. 17, 1939. Born in King William Co., Va., July 1, 1874, he was graduated from Harvard University in 1899, though two years earlier he had been admitted to the Utah bar. He began the practice of law in Denver, Colo., in 1900 and soon became actively interested in the honest administration of the law. He assisted in organizing the Honest Election League (1903-06) and the Law Enforcement League (1906-08), and was chairman of the Dry Denver Campaign Committee in 1910, having been the attorney for the Anti-Saloon League in its local option litigation before the Colorado Supreme Court.

Mr. Costigan was one of the organizers of the Direct Primary League and the Direct Legislation League of Colorado; was a past president of the Civil Service Reform Association of Denver, and an organizer of the Citizens Party in Denver which won the municipal elections of 1912. With the establishment of the Progressive Party in 1912 he left the Republican Party and became a vigorous supporter of the new organization. He was its unsuccessful candidate for governor in the elections of 1912 and 1914.

Returning to the practice of law, Mr. Costigan became the attorney for the Colorado merchants and the Arizona commercial interests in their litigation over freight rates before the Interstate Commerce Commission; represented the United Mine Workers of America during the Congressional investigation of the Colorado coal strike in 1914, and in 1916 he successfully defended the defendants in the murder trials growing out of the strike.

In 1917, Costigan, having espoused the cause of President Wilson, was named a member of the

Interstate Commerce Commission. In 1925 he claimed the Commission had ceased to be a non-political, fact-finding body and his statements were investigated by the Senate. As Congress shelved the report of the investigating commission, Costigan resigned in protest in 1928. He was elected as a Democrat to the U.S. Senate for the 1930-36 term and joined with the liberal bloc advocating public ownership of utilities, unemployment insurance, and old-age pensions. He was co-author of the Jones-Costigan Bill to aid the sugar-beet growers, and with Senator Wagner of New York introduced an anti-lynching bill. He did not seek re-election at the expiration of his term.

COST OF LIVING. See LIVING COSTS AND STANDARDS.

COTTON. The cotton crop of the United States for 1939, as estimated by the U.S. Department of Agriculture on Dec. 8, 1939, amounted to 11,792,000 bales of 500 lb., as compared with 11,943,000 bales in 1938, the crop of 18,946,000 bales in 1937, and 12,399,000 bales in 1936. The average yield of lint per acre was estimated at 235.9 lb., against 226.8 lb. in 1938, the record of 266.9 lb. in 1937, and 190.8 lb. was the 1928-37 average. Of 24,832,000 acres in cultivation July 1, 1939, 3.6 per cent were abandoned later, and 23,928,000 acres were left for harvest, against 24,248,000 acres in 1938. Abandonment exceeded the average, some acreage being removed in compliance with the Agricultural Conservation Program.

World carry-over of American cotton on July 31, 1939, as estimated by New York Cotton Exchange Service, was about 14,030,000 bales, compared with 13,712,000 at the end of the previous season and 6,235,000 two years earlier. The carry-over of American cotton in the United States, estimated at 12,966,575 running bales, together with the above estimate of world total, indicated the carry-over of American cotton in foreign countries on Aug. 1, 1939, at about 1,063,000 bales. World mill consumption of American cotton during the season ended July 31, 1939, was estimated at 11,281,000 bales compared with 10,870,000 bales in 1937-38, and 12,767,000, the 1928-37 average.

The world supply of all cotton for the 1939-40 season was estimated in December to total about 49,300,000 bales, only slightly less than the record supplies of each of the two previous seasons and about one-fifth larger than the 1928-38 average. World carry-over of all cotton on August 1 was about 21,462,000 bales, compared with 22,639,000 bales a year earlier and 14,326,000 bales, the 10-year average.

The prospective world supply of American cotton for the current season, 1939-40, was indicated at about 25,705,000 bales, about 330,000 bales more than in 1938-39 and only slightly less than the high record supply, 26,224,000 bales, of 1932-33. The stocks of spot cotton held as collateral against government loans in late November 1939 were indicated at slightly more than 10,000,000 bales.

Production in 1939 in the countries reported was estimated to be: United States 11,792,000, India 3,660,000, U.S.S.R. 4,050,000, China 2,800,000, Egypt 1,815,000, Brazil 2,000,000, Korea (Chosen) 183,500, Greece 66,000, and Tanganyika 66,000. The total world production in 1939-40 was indicated by the U.S. Department of Agriculture at the close of 1939 at 27,838,000 bales, slightly

above the previous season, and about 800,000 over the 10-year average.

The world production of commercial cotton in 1938 was estimated by the U.S. Bureau of the Census to be 28,221,000 (478 lb.) bales, of which the United States produced 11,623,000 (running) bales; India 5,200,000; U.S.S.R. (Russia) 3,800,000; Egypt 1,728,000; China 1,300,000; Brazil 1,877,000; Peru 390,000; Mexico 250,000, and all other countries 2,053,000 bales. In 1938-39, Argentina produced 304,000 bales; Uganda 253,000 bales; Belgian Congo 161,000 bales, and Anglo-Egyptian Sudan 263,000 bales.

The United States cotton crop for 1938, as reported by the Bureau of the Census, the estimated crop for 1938, and the quantity reported ginned to Dec. 13, 1939, are shown in the accompanying table.

UNITED STATES COTTON CROP, 1938-39

States	Crop in 1938 500-lb. bales	Crop—1939 * 500-lb. bales	Bales ^b ginned Dec. 13, 1939
Alabama	1,081,936	780,000	767,341
Arizona	196,164	197,000	154,592
Arkansas	1,358,182	1,410,000	1,353,939
California	424,532	450,000	405,495
Florida	20,867	11,000	9,621
Georgia	855,721	916,000	904,961
Louisiana	673,520	750,000	717,668
Mississippi	1,706,906	1,585,000	1,532,829
Missouri	331,434	440,000	421,516
New Mexico	93,502	97,000	83,641
North Carolina	390,416	455,000	453,767
Oklahoma	556,545	520,000	501,223
South Carolina	649,132	870,000	846,830
Tennessee	487,494	450,000	428,148
Texas	3,093,911	2,830,000	2,667,172
Virginia	10,812	12,000	9,920
All Others	13,266	19,000	16,887
United States	11,944,340	11,792,000	11,275,550

* estimated ^b running bales

The table includes for 1939, under the ginning report, 169,424 round bales counted as half bales and also 21,539 bales of American-Egyptian cotton, and 2103 bales of Sea Island cotton. The 1939 crop of Arizona was estimated to include 22,000 bales of American-Egyptian cotton grown on 40,000 acres, and 2600 bales of Sea Island cotton were grown largely in Georgia and Florida.

Cotton of the 1939 crop ginned up to Dec. 13, 1939, averaged slightly lower in grade and shorter in staple compared to that ginned up to Dec. 13, 1938, according to reports based on the 11,251,298 bales of American upland cotton ginned to that date. About 92.6 per cent of the cotton ginned up to Dec. 1, 1939, was tenderable, against 94.6 in 1938.

Oil mills in the United States, during the cotton year ended July 31, 1939, crushed 4,470,516 tons of cottonseed. The products of the seed included 1,113,312 bales of lint, 1,161,079 tons of hulls, 2,023,341 tons of cake and meal, and 1,409,413,537 lb. of oil.

Consumption of all cottons in the United States rose in 1938-39 to 6,858,426 bales from 5,747,978 bales in 1937-38. Cotton used by American mills was consumed largely, nearly 85 per cent, in the cotton growing States. World consumption of cotton (exclusive of linters in the United States) for the year ended July 31, 1939, according to the U.S. Bureau of the Census, approximated 27,748,000 bales compared with 27,050,000 bales in the previous year. Estimates based on reports of the New York Cotton Exchange Service were equivalent to about 28,500,000 bales, about 2,700,000 bales above the average for the 10 years

ended 1937-38. Of the total consumption in 1938-39, about 17,237,000 bales were foreign and 10,870,000 bales American. Consumption of American cotton in countries other than the United States decreased sharply in 1938-39 to slightly more than 4,500,000 bales, while non-American cotton in countries other than the United States totaled 17,100,000 bales.

The price of middling $\frac{3}{8}$ -inch cotton at the 10 spot markets averaged 8.90 cents per pound during the year ended July 31, 1939, compared with 8.70 in 1937-38, 12.70 in 1936-37, and 11.32 cents, the 1928-37 average. Prices averaged in January, 1939, 8.54 cents, February 8.53, March 8.64, April 8.51, May 9.16, June 9.50, July 9.37, August 8.98, September 8.88, October 8.83, November 9.30, and closed on December 29 at an average of 10.76 in the southern spot markets and at 11.36 cents in New York, and 8.70d. at Liverpool. Prices received by producers at local farm markets on Dec. 15, 1939, were estimated to average 9.71 cents per pound for lint and \$24.75 per ton for cottonseed compared with 8.20 cents and \$23.04, respectively, on Dec. 15, 1938. The value of production of cotton lint was estimated at \$524,090,000 in 1939 and of cottonseed \$113,535,000 compared with \$513,638,000 and \$115,690,000 reported in 1938. See BUSINESS REVIEW.

HENRY M. STEECE.

COURT GAMES. See SPORTS.

COURTS, FEDERAL. (Excepting the SUPREME COURT, q.v.). The conviction (June 3) of Martin T. Manton, late senior judge of the U.S. Circuit Court of Appeals, on the charge of conspiring to obstruct justice and thereby to defraud the Government, was an event without precedent in the annals of the Federal bench. Manton, until his resignation before impending disclosures, served in New York City, handling many cases involving great amounts; he had completed 23 years on the bench; and his seniority of service, as well as the magnitude and number of cases arising in his jurisdiction, gave him a standing second only to that of the members of the Supreme Court. The indictment against him specified his participation in transactions involving \$186,000, connected with eight matters, including purported loans from banks. It was stated at the time of his conviction that no judge of the U.S. Court of Appeals had previously been found guilty of selling justice.

Manton was tried in New York, before Federal District Judge Calvin W. Chesnut of Baltimore, specially assigned by the Chief Justice. John T. Cahill, U.S. Attorney, prosecuted; under commission as special assistant to the Attorney-General he had obtained the indictment. He brought testimony of numerous witnesses, some of them originally co-defendants but now giving Government evidence, to show that Manton and his associates had not merely accepted monetary inducements for favorable action on the Court's part but had pressed payments from parties, by working on victims' fear of hostile treatment in court. Manton was sentenced (June 20) to serve two years in a Federal prison and to pay a fine of \$10,000. Appealing from the conviction, he took his case to a specially constituted court composed of retired Justice Sutherland of the Supreme Court, Justice Stone of that court, and Judge Charles E. Clark of the Circuit Court; this tribunal, after hearing the appeal, unanimously upheld the conviction (December 4).

Among the effects of the conviction of Manton, one of the most direct was the doubt cast on the merit of a number of decisions that he had rendered. Thus his decision in a case, involving a mortgage, between the 671 Prospect Avenue Holding Corporation and the East River Savings Bank, of New York, was declared by a Circuit Court (July 2) to be void. Another Federal Judge, Edwin S. Thomas of the District Court, serving in Connecticut, resigned from the bench in advance of Manton's trial and was mentioned in the prosecution, in connection with a specified sum alleged to have been collected by Manton.

Creation of a Court Proctor. A measure passed by Congress and signed (August 7) by the President created the office of Court Proctor, to be filled by a person named by the Supreme Court; his pay was to be \$10,000 a year. An assistant, chosen in the same way, was to receive \$7500. The Proctor was authorized to supervise the fiscal operations of all the Federal courts; subject to the will of the Chief Justice, he was to direct the employment, discharge, and payment of these courts' officers. Such duties of business management had previously been performed by the Department of Justice.

Courts' Decisions. A great number of rulings relating to the contentions between the NLRB and the labor unions or the employers were made in the course of the year; some in which there followed determinations by the SUPREME COURT are noted under that title; other decisions, of particular local significance, under appropriate States.

Among decisions of general public interest were those of the Court of Appeals of the District of Columbia, sustaining (August 4) the action of certain steel-making companies against an order of the Department of Labor requiring wages to be paid according to rates set separately for localities—six for the entire United States—as a requisite qualification to obtain Government contracts; the same court ruled, in the WMEX-Yankee-Network case that the Federal Communications Commission, in granting licenses to broadcast, must consider the effects that this may produce in competition between stations. A Circuit Court's decision in Chicago (July 17) set aside an order of the Secretary of Agriculture to Swift and Company, packers, to cease from allegedly unfair practises, involving grants of longer credit to some purchasers, such as institutions.

A matter affecting growers of cotton was handled in a District Court's decision in western Texas, rendered in July: the Government suing farmers who had borrowed on their cotton in 1935 and later sold the cotton but failed to repay the loans, the Court held applicable the statute of limitations that would have barred an analogous suit by a private creditor. The District Court of the District of Columbia dismissed (July 26) a prosecution that the Department had brought against the American Medical Association and other associations and individuals, in the endeavor to bring the medical groups under Federal discipline as a monopoly; the ruling rested on the ground that medicine did not properly constitute trade. In Tennessee, a Federal District Court dismissed (August 11) the action brought by Dr. Arthur E. Morgan, former chairman of the TVA (see YEAR BOOK, 1938, pp. 748-9) against his removal, holding that the

President had full power of removal from this office.

See LAW under *Administration*; NATIONAL LABOR RELATIONS BOARD; SUPREME COURT; NEW YORK; NEW JERSEY.

CREDIT CONDITIONS. See AGRICULTURE; BANKS AND BANKING.

CREDIT UNIONS. See CO-OPERATIVES.

CRETE, krēt (KRETE). An insular division of Greece. It comprises the four departments of Canea, Erakleion, Lasithion, and Rethymnon. Area, 3232 square miles; population (Jan. 1, 1938), 386,427. Capital, Canea (Khania), 26,604 inhabitants. See GREECE.

CRICKET. See SPORTS.

CRICKETS. See ENTOMOLOGY, ECONOMIC.

CRIME. See PRISONS, PAROLE, AND CRIME CONTROL.

CRIMEAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

CRISTEA, PATRIARCH MIRON. A Rumanian ecclesiastic, died at Cannes, France, Mar. 6, 1939. Born in Toplitz-Romana, Transylvania, in 1868, he studied at Hermannstadt in Transylvania, and received a degree from the Budapest University in 1895. Appointed secretary to the Metropolitan of Hermannstadt, in 1902 he joined the monastic order of Hodos-Bodrog, and from 1890 until 1900 he edited *Telegraful Roman*, the organ of the Orthodox Church in Transylvania, and was a leading champion of Rumanian rights. He served as Bishop of Caransebesch from 1909 to 1919, and in the latter year was named Metropolitan Primate of Rumania. He was named First Patriarch of the Rumanian Orthodox Church in 1925. An organizer of Rumanian church and monastery life, he assisted in negotiating for *rapprochement* between the Church of England and the Apostolic Orthodox Church.

After the death of Ferdinand I in 1927, the Patriarch was appointed one of the three Regents who served until 1930 when King Carol ascended the throne. On Feb. 11, 1938 he was invited to become Premier of Rumania by the King and served until his death. See RUMANIA under *History*.

CROATS. See YUGOSLAVIA.

CROP LOANS. See FARM CREDIT ADMINISTRATION.

CROPS. See AGRICULTURE; FEDERAL CROP INSURANCE CORPORATION; articles on leading crops, as COTTON, WHEAT; sections on *Agriculture* under the States and on *Production* under the countries.

CROSLEY, REAR ADMIRAL WALTER SELWYN, U.S.N., RET. An American hydrographer, died in Baltimore, Jan. 6, 1939. He was born in East Jaffrey, N. H., Oct. 30, 1871 and was graduated from the U.S. Naval Academy in 1893. During his long naval service—he retired in 1935—he participated in the Brazilian Revolution (1893), the railroad riots in California (1894), the Spanish-American War (1898), the Philippine Insurrection (1900), the Dominican Occupation (1916), and the World War (1917–18). Naval attaché at Constantinople (1910–12), Petrograd (1917–18), and Madrid (1918), he became commandant of the 7th Naval District, Key West, Fla. (1921), the 9th Naval District at Chicago (1929–32), and the 15th Naval District at Balboa, C. Z., (1933–35).

During 1925–27 Crosley was hydrographer of the Navy and directed surveys of Cuban and

Central American waters. Promoted to rear admiral in 1927 he was given command of Squadron No. 1 of the Fleet Base Force. During 1932–33 he was commander of Battle-Ship Division 3. He was a delegate to the International Hydrographic Conferences of 1926 and 1929 and in August, 1937, was appointed resident director of the International Hydrographic Bureau at Monaco. He retired in June, 1938.

CROSS-COUNTRY RUNNING. See SPORTS.

CRUSTACEA. See ZOOLOGY.

CUBA. An island republic of the West Indies. Capital Havana (Habana).

Area and Population. Area, 44,164 square miles; estimated population on Dec. 31, 1938, 4,227,587 (about 60 per cent white, 40 per cent Negro). During 1933–37 a total of 262,725 passengers entered Cuba and 316,815 departed. Estimated populations of the chief cities, including suburbs, on Dec. 31, 1936: Havana, 552,133; Holguin, 137,016; Camaguey, 135,126; Santiago de Cuba, 104,729; Santa Clara, 98,183; Marianao, 84,357; Moron, 83,291; Matanzas, 80,954.

Defense. The army comprises about 16,500 officers and men; the navy, 2650 men with 5 gunboats, 2 escort vessels, 1 armed transport, and about 12 coastguard vessels; the air force, about 116 men and 16 airplanes.

Education and Religion. The 1931 census showed 39 per cent of the adult population to be illiterate. Enrollment in 4115 primary schools in 1937–38 was 423,420 pupils (312,972 white, 110,478 colored). Special government institutes for secondary education are maintained in each province. The University of Havana has about 6000 students. Roman Catholicism is the dominant religion but there is no state church.

Production. Agriculture is the chief occupation. Sugar accounted for 69.9 per cent of the value of all 1938 exports. Sugar production in 1938 was 2,975,683 tons (of 2240 lb.) valued at \$96,650,090 (2,970,997 tons worth \$117,062,035 in 1937). The 1939 sugar quota was fixed at 2,696,517 tons. Tobacco production in 1938 was 25,100 metric tons; coffee (1938–39), 30,700 metric tons. Corn, cacao, rice, fruits, and vegetables are other leading crops. There were 4,964,000 cattle and 695,000 horses, mules, and asses in 1936. Leading manufactures are vegetable oils, meat products, clothing, footwear, furniture, textiles, paints, paper, glass, cement. Foreign tourists and excursionists arriving at Havana in 1938 numbered 158,013 (178,396 in 1937). The 1938 mineral production was: Iron ore, 152,099 gross tons (shipments); crude chromite, 40,163 metric tons (shipments to United States); manganese ore, 123,844 metric tons; copper ore, 341,184 tons (1937).

Foreign Trade. Cuban imports in 1938 were \$106,077,325 (\$105,860,703 in 1939); exports, \$142,677,752 (\$147,676,258). The United States supplied 70.8 per cent of the 1938 imports (74.4 in 1939) and took, 70.8 per cent of the exports (72.4 in 1939). See IMPORTS AND EXPORTS. Values of the leading 1938 exports: Raw sugar, \$82,397,000; refined sugar, \$17,374,000; molasses, \$11,552,000; leaf tobacco, \$10,478,000.

Finance. By law of Nov. 2, 1938, the fiscal year ending June 30 was changed to coincide with the calendar year. Budgetary collections for 1937–38 were 77,886,000 pesos; expenditures, 78,554,000. The budget for the calendar year 1939 estimated revenues at 76,000,000 pesos and expenditures at 75,992,000. The Treasury Depart-

ment reported the public debt on Mar. 31, 1939, at \$141,086,000 (\$132,953,000 on Mar. 31, 1938). The 1939 figure was divided as follows: External, \$111,216,000; internal, \$7,517,000; sugar debt, \$2,353,000; public works debt, \$20,000,000. The Cuban peso was about equal to the U.S. dollar in 1938. The 1940 budget estimates were: Revenues, 76,000,000 pesos; expenditures, 75,985,000 pesos.

Transportation. Cuba in 1939 had about 3079 miles of railway lines, excluding some 5650 miles of private lines on sugar estates. Improved highways extended about 2230 miles. Incoming Pan American Airways planes in 1938 carried 15,335 passengers, 46,010 lb. of mail, and 49,236 lb. of express. Outgoing planes carried 14,906 passengers, 38,867 lb. of mail and 11,338 lb. of express.

Government. Cuba at the beginning of 1939 was governed under the Constitution of June 12, 1935 (see 1935 YEAR BOOK, p. 189). There was a Senate of 36 members and a House of Representatives of 162, both controlled by supporters of the government headed by President Federico Laredo Bru. Formerly Vice President, Laredo Bru was sworn in as President Dec. 24, 1936, following the impeachment of President Miguel Mario Gómez. For developments in 1939, see *History*.

HISTORY

Constituent Assembly Elected. A freely elected Constituent Assembly to draw up a new Constitution had been the goal of most Cuban political parties since the "sergeants' revolt" of 1933 made Fulgencio Batista Chief of Staff of the army and the dominant political power in the republic. This objective was attained with Batista's collaboration on Nov. 15, 1939. In one of the most impartial elections ever held in Cuba, the 76 members of the Constituent Assembly were elected out of 816 candidates submitted by 11 parties.

The main issue of the election was support of or opposition to the Laredo Bru Government. The administration represented the parties collaborating with Colonel Batista and for the most part pledged to support him for President in the general election to be held under the Constitution framed by the Constituent Assembly. Both government and opposition parties formed loose coalitions during the electoral campaign. The election was a victory for the opposition groups, which captured 41 seats against 35 by the government parties.

The strength of the opposition in the Constituent Assembly was distributed as follows: Cuban Revolutionary party (leader, ex-President Ramón Grau San Martín), 18; Democratic Republicans (leader, ex-President Mario G. Menocal), 15; ABC (leader, Dr. Joaquín Martínez Sáenz), 4; Republican Action (leader, ex-President Miguel Mariano Gómez), 4. The standing of the government parties was: Liberals (leader, Alfredo Hornedo y Suárez), 16; Nationalists (leader, Dr. José E. Bringuier Laredo), 9; Communist Revolutionary Union (leader, Juan Marinello Vidaurreta), 6; National Democrats (leader, Dr. Félix del Prado), 3; National Realists, 1.

The months prior to the election were marked by several revisions of the electoral law, which had at first barred some of the opposition groups, and by repeated postponements of the election date, originally set for August 30. There were repeated charges by opposition parties that Colo-

nel Batista was attempting to rig the electoral machinery and use the army's influence on behalf of the government candidates with a view to promoting his Presidential ambitions. But the conduct of the elections and the opposition victory nullified these criticisms. On April 21 Batista asserted: "If it is necessary for me to become President, I shall enter the campaign on an equal basis with other candidates and shall expect to win only by the vote of the people."

A law setting Feb. 28, 1940, as the date for the general elections was passed May 25, 1939. A bill paving the way for Batista's entrance into the Presidential race was approved on November 28. It made possible his temporary retirement as Chief of Staff and the reorganization of the army to reduce defense expenditures to a level commensurate with the national income. The results of the Constituent Assembly elections, however, were considered a severe blow to Batista's Presidential aspirations. Nevertheless he resigned as Chief of Staff on December 6 and on December 10 was proclaimed as candidate of all the parties represented in the government coalition.

Meanwhile the meeting of the Constituent Assembly, scheduled for December 15, was indefinitely postponed due to controversies that made it impossible to certify a quorum of delegates. One dispute involved the multiple seats to which some of the opposition leaders were elected. The government parties contended that the extra seats should be declared vacant, thus giving the government a majority in the Constituent Assembly. However the Superior Electoral Tribunal ruled that delegates to the Assembly elected in more than one province might resign their extra seats in favor of substitutes, and this ruling was upheld by the Cuban Supreme Court on December 15.

Other controversies arose from the opposition demand that the general elections set for Feb. 28, 1940, be postponed until after the Constituent Assembly had drawn up a new Constitution. The opposition also insisted that the Constituent Assembly had sovereign powers and that the existing Congress should resign when the Assembly convened, while opposition leaders held that the Constituent Assembly's powers were limited to framing a new Constitution. No settlement of these issues was in sight at the year end.

Batista's Policies and Problems. During 1939 Colonel Batista continued the Leftist policy he had adopted in 1938 in an effort to widen popular support of his indirect dictatorship (see 1938 YEAR BOOK, p. 189 f.). His visit to Mexico during Feb. 3-12, 1939, aroused enthusiasm among the Cuban laboring classes but was severely criticized by commercial, industrial and middle class elements. It was widely believed that the visit might result in the espousal by Batista of the expropriation measures adopted in Mexico (q.v.). But the army chief on his return to Havana assured capital that there would be "no spoliation of property" and stated that his policy would be "slightly Left of center," avoiding both communism and fascism. Rejecting proposals for a Mexican-Cuban front against the United States, he advocated a "Washington-Havana-Mexico City axis" against European ideologies.

Conservative elements, however, continued to regard with suspicion and alarm the legislative and other measures sponsored by Batista and his adherents. Some of these measures were declared confiscatory and ruinous to Cuba's credit and economic prosperity. Among them were the law

published March 25 regulating and controlling dwelling house rentals; the bill for liquidation of the mortgage moratorium which scaled mortgage interest rates down to 3 per cent or lower; the banking and monetary legislation and higher taxes proposed by the President in a message to Congress; the President's request late in June that Congress authorize coinage of an additional 15,000,000 silver pesos to balance the 1939 budget and meet other expenditures out of the seignorage; a law requiring Cuban exporters to deposit with the Treasury 10 to 20 per cent of their dollar exchange for Cuban silver; and the decree of July 6 prohibiting unauthorized increases in foodstuff prices above the level prevailing on July 1.

Some of these measures were designed to balance the budget and check the depreciation of the Cuban peso, which was attributed mainly to undue expansion of the currency. But they failed to produce the results anticipated by the government. The request for coinage of additional pesos in June caused a drastic slump in the exchange value of the peso and the request was hastily withdrawn. In its place was adopted new tax measures and a bill making internal dollar obligations payable in pesos with certain exceptions. The foodstuffs price control bill was rescinded, and the highly controversial mortgage moratorium liquidation bill, that had been repeatedly endorsed by Colonel Batista, was vetoed by President Laredo Bru on October 16 on the ground that it did not embody the army leader's ideas.

Effect of European War. With the outbreak of the European war on September 1, Cuba experienced a speculative boom in anticipation of a rapid rise in sugar prices similar to that which had produced the famous "dance of the millions" during and after the World War. The sugar boom collapsed when the United States Government on September 11 cancelled its sugar import quota system, thus automatically raising the duty on Cuban sugar from 90 cents to \$1.50 per 100 lb. Cuban producers placed their main hope for improved conditions upon the reopening of the U.S. market on a permanent quota basis. These developments spurred negotiations for a revision of the United States-Cuban reciprocity treaty, which had been hanging fire since the preceding December. On December 18 an agreement supplementing and amending the reciprocity treaty was signed at Washington. It was immediately ratified by the Cuban Congress and went into effect December 23. The new agreement restored the former U.S. duty of 90 cents per 100 lb. on Cuban sugar in return for further tariff concessions by Cuba.

Foreign Relations. Outside of Colonel Batista's visit to Mexico, the principal developments of the year were the tightening of relations with the United States and the other American republics as a result of the European conflict; the refusal of the Cuban Government to permit the landing of 917 Jewish refugees from the German liner *St. Louis*, which arrived at Havana late in May; and the belated recognition of the Franco regime in Spain on May 25. There was considerable agitation among liberal and Leftist groups in Cuba against propaganda by Spanish Fascists. On April 25 the Minister of Government decreed the dissolution of the Cuban branch of the *Falange Española* for "anti-Cuban" activities. It was charged that a Falangist speaker had

advocated restoration of Spanish rule in the island. The Senate on March 21 approved a resolution conferring on President Franklin D. Roosevelt the title "Eminent Citizen of America." An agreement concluded with Italy on Jan. 16, 1939, provided that Cuban imports into Italy were to be maintained at a value of not less than 50 per cent of the value of Italian imports into Cuba.

CUMBERLAND PRESBYTERIAN CHURCH. See PRESBYTERIANS; RELIGIOUS ORGANIZATIONS.

CURAÇAO, kōō'ra-sā'ō or kū'ra-sō'. A colony in the Netherlands West Indies comprising two groups of islands (1) Aruba, Bonaire, Curaçao, just north of Venezuela (2) Saba, St. Eustatius, St. Martin (southern part only), just west of the Virgin Islands. Total area, 403 square miles; estimated population (Jan. 1, 1938), 95,000. Capital, Willemstad on the island of Curaçao, 28,350 inhabitants (1937). Education (1936): 49 schools and 12,474 pupils.

Production. Maize, pulse, cattle, salt, and phosphate of lime (102,000 metric tons exported in 1937) are the chief products. The refining of imported crude oil (from Venezuela and Colombia) is the chief industry (22,261,000 metric tons of refined oils were produced in 1938). Trade (1938): (values in old U.S.A. gold dollars), imports, \$129,900,000; exports, \$110,700,000. Air services by K.L.M. (Royal Air Traffic Company of the Netherlands) link Barbados, Colombia, Netherlands Guiana, Netherlands West Indies, Trinidad, Venezuela, and give connections with Pan American Airways to the United States and greater South America.

Government. Budget (1936): revenue, 7,969,000 florins; expenditure, 7,964,000 florins (florin averaged \$0.6448 in 1936; \$0.5505 in 1937; \$0.5501 in 1938). The colony is administered by a governor, aided by a privy council of 4 members and a colonial council of 13 members all nominated by the Queen. Governor, C. J. J. Wouters (appointed on Apr. 7, 1936).

CURLING. See SPORTS.

CURRENCIES, VALUE OF FOREIGN. The legal estimates of the value of foreign moneys on Jan. 1, 1940, as issued by the U.S. Secretary of the Treasury, are given in the table on page 178.

See FINANCIAL REVIEW; INTERNATIONAL BANKING; MONEY; UNITED STATES.

CUSHING, HARVEY (WILLIAMS). An American surgeon, died in New Haven, Conn., Oct. 7, 1939. He was born in Cleveland, Ohio, Apr. 8, 1869, and was educated at Yale University (A.B., 1891) and at Harvard University (M.D., 1895). After four years at Johns Hopkins University Hospital in Baltimore, he studied in Switzerland and in England. From 1902 to 1912 he was associate professor of surgery at Johns Hopkins, when he joined the staff of Harvard University as professor of surgery, also becoming surgeon-in-chief of the Peter Bent Brigham Hospital in Boston. He was retired from both these offices on Sept. 15, 1932 and became Moseley Professor of Surgery, emeritus, having reached the legal retirement age of surgeons in Massachusetts. He also retired from active practice in that year, having for 37 years been engaged in his profession. His retirement, however, was not complete, for in September 1933, he accepted the newly-created Sterling professorship of neurology at Yale University. He was retired as emeritus professor in 1937.

VALUES OF FOREIGN MONETARY UNITS — JAN. 1, 1940

Country	Monetary Unit	U.S. Money	Remarks
Argentine Republic	Peso	\$1.6335	Valuation is for gold peso. Paper nominally convertible at 44% of face value. Conversion suspended Dec. 16, 1929.
Australia	Pound	8.2397	Control of gold stocks and exports authorized Dec. 17, 1929.
Belgium	Belga	.1695	By decree of Mar. 31, 1936, 1 belga = 5 Belgian francs.
Bolivia	Boliviano	.6180	Conversion of notes into gold ended Sept. 23, 1931.
Brazil	Milreis	.0606	Based upon official rate for milreis in terms of the dollar as announced by the Bank of Brazil. Conversion of Stabilization-Office notes into gold ended Nov. 22, 1930.
British Honduras	Dollar	1.6931	Conversion of notes suspended.
Bulgaria	Lev	.0122	Exchange control established Oct. 15, 1931.
Canada	Dollar	1.6931	Embargo on export of gold, Oct. 19, 1931; redemption of Dominion notes in gold suspended Apr. 10, 1933.
Chile	Peso	.2060	Given valuation is of gold peso. Gold pesos are received for conversion at the rate of 4 paper pesos for 1 gold peso. Conversion of notes suspended July 30, 1931.
China	Yuan		Silver standard abandoned, Nov. 3, 1935; bank notes legal tender under Currency Board control; exchange rate for British currency fixed at 1s. 2½d., or 29½¢ U.S., per yuan.
Hong Kong	Dollar		Treasury notes and notes of the three banks of issue made legal tender by silver nationalization ordinance, Dec. 5, 1935; exchange fund created to control exchange rate.
Colombia	Peso	5714	Obligation to sell gold ended Sept. 24, 1931. Gold content of .56424 gram of gold 910 fine made effective Nov. 30, 1938.
Costa Rica	Colon	.7879	Conversion of notes into gold suspended Sept. 18, 1914; exchange control established Jan. 16, 1932.
Cuba	Peso	1.0000	By law of May 25, 1934.
Czecho-Slovakia	Koruna		Conversion of notes into gold suspended Sept. 29, 1931.
Denmark	Krone	.4537	U.S. money is principal circulating medium.
Dominican Republic	Dollar	1.6931	Conversion of notes into gold suspended Feb. 9, 1932.
Ecuador	Sucres	.3386	Conversion of notes into gold suspended Sept. 21, 1931.
Egypt	Pound (100 piasters)	8.3692	Conversion of notes into gold suspended June 28, 1933.
Estonia	Kroon	.4537	Conversion of notes into gold suspended Oct. 12, 1931.
Finland	Markka	.0426	Provisions of monetary law of Oct. 1, 1936, providing for gold content of franc, superseded by decree of June 30, 1937, which stated that the gold content of the franc shall be fixed ultimately by a decree adopted by the Council of Ministers. Pending such decree a stabilization fund shall regulate the relationship of the franc and foreign moneys.
France	Franc		Piaster pegged to French franc at rate of 1 piaster = 10 French francs; exchange of notes for gold ended Oct. 2, 1936.
French Indo-China	Piaster		Exchange control established July 13, 1931.
Germany	Reichsmark	4033	Sale of gold at legal monetary par suspended Sept. 21, 1931.
Great Britain	Pound Sterling	8.2397	Conversion of notes into gold suspended Apr. 26, 1932.
Greece	Drachma	.0220	Conversion of notes into gold suspended Mar. 6, 1933.
Guatemala	Quetzal	1.6931	National bank notes redeemable on demand in U.S. dollars.
Haiti	Gourde	.2000	Gold exports prohibited Mar. 27, 1931; lempira circulates as equivalent of half of U.S. dollar.
Honduras	Lempira	.8466	Exchange control established July 17, 1931.
Hungary	Pengö	.2961	Sale of gold at legal monetary par suspended Sept. 21, 1931.
India (British)	Ruppee	.6180	Obligation to pay out gold deferred Mar. 13, 1932; exchange control established Mar. 1, 1936.
Iran (Persia)	Rial	.0824	Conversion of notes into gold suspended Sept. 21, 1931.
Ireland	Pound	8.2397	New gold content of 46.77 milligrams of fine gold per lira established by monetary law of Oct. 5, 1936.
Italy	Lira	.0526	Embargo on gold exports Dec. 13, 1931.
Japan	Yen	8440	Money pegged to sterling Sept. 28, 1936, 2,522141 = £100.
Latvia	Lat		British money is principal circulating medium.
Liberia	Dollar	1.6931	Free export of gold suspended Oct. 1, 1935.
Lithuania	Litas	.1693	Decree of Aug. 28, 1936, left the monetary unit, the peso, to be later defined by law.
Mexico	Peso		Suspension of convertibility of notes into gold and restrictions placed on free gold exports—Sept. 26, 1936; gold export prohibition repealed by decree June 28, 1938.
Netherlands and colonies	Guilder (florin)	.6806	Newfoundland and Canadian notes legal tender.
Newfoundland	Dollar	1.6931	Exchange of notes into gold suspended and export of gold curbed, Aug. 5, 1914; exchange regulations December, 1931.
New Zealand	Pound	8.2397	Embargo on gold exports Nov. 13, 1931.
Nicaragua	Cordoba	1.6933	Conversion of notes into gold suspended Sept. 29, 1931.
Norway	Krone	.4537	U.S. money is principal circulating medium.
Panama	Balboa	1.0000	Paraguayan paper currency is used; exchange control established June 28, 1932.
Paraguay	Peso (Argentine)	1.6335	Conversion of notes into gold suspended May 18, 1932.
Peru	Sol	.4740	By act approved Mar. 16, 1935.
Philippine Islands	Peso	.5000	Exchange control established Apr. 27, 1936.
Poland	Zloty	.1899	Gold exchange standard suspended Dec. 31, 1931.
Portugal	Escudo	.0749	Exchange control established May 18, 1932.
Rumania	Leu	.0101	Conversion of notes into gold suspended Oct. 7, 1931.
Salvador	Colon	.8466	British £ sterling and Straits \$ and half \$ legal tender.
Spain	Peseta		Conversion of notes into gold suspended Sept. 29, 1931.
Straits Settlements	Dollar	.9613	Order of Federal Council enacted Sept. 27, 1936, instructed the Swiss National Bank to keep gold parity of franc at value ranging from 190 to 215 milligrams of fine gold.
Sweden	Krona	.4537	Conversion of notes into gold suspended May 11, 1932.
Switzerland	Franc		100 piasters = Turkish £; conversion of notes into gold suspended 1916; exchange control since Feb. 26, 1930.
Thailand (Siam)	Baht (Tical)	.7491	Conversion of notes into gold suspended Dec. 28, 1932.
Turkey	Piaster	.0744	Conversion of notes into gold suspended Aug. 2, 1914; exchange control since Sept. 7, 1931. New gold content of .585018 gram of pure gold per peso established by monetary law of Jan. 12, 1938.
Union of South Africa	Pound	8.2397	Exchange control established Dec. 12, 1936.
U.S.S.R.	Chervonetz	8.7123	Exchange control established Oct. 7, 1931.
Uruguay	Peso	.6583	
Venezuela	Bolivar	.3267	
Yugoslavia	Dinar	.0298	

* At par as regards gold units; nongold units have no fixed par with gold.

One of the world's outstanding neurologists, Dr. Cushing made many pioneer contributions to medicine, and the name Harvey Cushing became almost synonymous with brain surgery. He was one of the first advocates of the use of the X-ray, and one of the first to introduce the use of blood-pressure determinations in the United States. In 1932, he described a new clinical entity, "pituitary basophilism," known as "Cushing's disease." He was a lifelong student of the diseases of the ductless glands, and his *The Pituitary Body and Its Disorders* (1912) was a classic of clinical medicine.

Dr. Cushing's accomplishments brought him many honors, including the Charles Mickle Fellowship of the University of Toronto (1924) as one who did "most during the previous ten years to advance sound knowledge of a practical kind in medical art or science." He received the Cameron prize of the University of Edinburgh in 1924, the Lister medal of the University of London in 1930, and the gold medal of the National Institute of Social Sciences in 1935. An active member of many scientific societies, he was president of the American College of Surgeons (1923) and of the American Surgical Association (1927), and was the recipient of honorary degrees from American and European universities.

In 1915, Dr. Cushing went to France with a Harvard ambulance unit, and during 1917-19 he saw service with the British Expeditionary Forces. He was director of U.S.A. Base Hospital No. 5 and was a consultant in neurological surgery to the American Expeditionary Forces. For his War work he received the Distinguished Service Medal (U.S.), the French Legion of Honor, and was made a Companion of the Bath. During the hostilities he kept a voluminous diary, parts of which were published in 1936 as *From a Surgeon's Journal*.

A frequent contributor of papers to the scientific press, dealing especially with neurological surgery, he wrote *Tumors of the Nervous Acusticus* (1917), *A Classification of the Gliomata* (1925) with P. Bailey, *Intracranial Tumours* (1932), *Pituitary Body and Hypothalamus* (1932), and *The Meningiomas* (1938), with L. Eisenhardt. Also, he published a two-volume *Life of Sir William Osler* (1925) which received the Pulitzer Prize as the outstanding American biography of the year, and *Consecratio Medici and Other Essays* (1928).

CUSTOMS SERVICE. The Customs Service, the first governmental agency provided by the first Federal Congress, celebrated on Aug. 1, 1939, the sesquicentennial of its organization. Although its primary function is now and has always been the collection of duties on imports, it is also charged with many other responsibilities, such as the enforcement of laws relating to vessels and navigation, the registering and licensing of vessels, the regulation of the movement of commodities, persons, vessels, aircraft, and land vehicles between the United States and foreign countries, and the supervision over and restriction of imports and exports. Its functional growth and the increase in its personnel during the 150 years of its existence paralleled roughly the growth in the area and population of the United States, but the progressive development of this country has been only one of the factors influential in determining the amount of duties collected; variations in tariff policy, changes in economic conditions in this and other countries,

and the unusual demand for certain products because of droughts, wars, etc., have been of equal if not greater importance in their effect on the customs revenue. Collections by the Customs Service, in consequence, although manifesting a generally upward trend during the past century and a half, have fluctuated rather sharply from year to year.

Customs Collections. During the fiscal year 1939, the amount collected as customs duties totaled \$319,241,136, or little more than half the collections of a decade before, which were the largest in customs history. In addition to duties which constituted the major portion of the collections, \$2,168,859 was secured from fines and other miscellaneous customs collections, and \$28,985,949 was collected for other governmental agencies, so that total collections by the Customs Service aggregated \$350,395,944 in 1939, as compared with \$392,095,464 in 1938.

There was comparatively little fluctuation in the collections from month to month during the year, the difference between the maximum and minimum monthly collections being smaller than for any but one year of the past decade (1936). The usual seasonal factors were responsible for the peaks in October 1938 and May 1939, but the large April total was due to heavy importations of German merchandise immediately preceding the imposition of countervailing duties on April 23, 1939.

All but 4 of the 15 dutiable tariff schedules participated in the general decline in customs collections. Contrary to the general trend, however, the rayon schedule yielded the largest returns ever recorded, although the total collections under this schedule were of minor consequence. Increased collections also accrued from commodities covered by the chemical, tobacco, and wool schedules, the increase in the latter case being due to unusually low importations of raw wool during 1938, rather than to particularly large importations in 1939. Agricultural commodities, liquors, and sugar, which are of greater importance as sources of customs revenue, each yielded smaller returns than during the previous year.

The Tariff Act of 1930 provides for three types of duties,—specific, ad valorem, and compound, the latter being a combination of the other two. During the fiscal year 1939 the value of goods dutiable at specific rates aggregated \$502,000,000, or 61 per cent of the total value of dutiable imports, while the value of imports dutiable at ad valorem and at compound rates represented 33 and 6 per cent, respectively, of the total.

Almost half of the total duties collected during 1939 consisted of duties on imports from Europe, among which the United Kingdom was by far the most important as a source of customs revenue. Duties on British products were more than double those derived from goods imported from any other European country, and were slightly greater than the amount received as duties on imports from Cuba. More than half of the total duties collected on imports from all the North and Central American countries came from duties on Cuban imports—chiefly sugar and tobacco. Duties collected on Canadian imports were considerably smaller than in 1938 due to a 50 per cent decrease in imports of distilled liquors from Canada. Argentina, which supplies the United States with large quantities of flaxseed and canned beef, is by far the most important among

South American countries as a source of customs revenue. The sharp decline in duties on imports from that country in 1939 was due to the cessation of imports of corn, which were quite large during the first few months of the fiscal year 1938. Duties on the products of most of the important countries declined from the previous year but, contrary to the general trend, increases were recorded on duties collected on imports from Germany, France, Turkey, Switzerland, Greece, and Mexico. In the case of Germany, the increase was due to the flood of imports immediately prior to the imposition of countervailing duties on April 23, 1939, and to the inclusion in the German total for 1939 of goods previously listed as Austrian.

VALUE OF DUTIABLE IMPORTS AND COMPUTED DUTIES COLLECTED BY THE UNITED STATES, FISCAL YEARS ENDED JUNE 30th, 1938 AND 1939

[In millions of dollars]

Country	Value		Duties	
	1938	1939	1938	1939
United Kingdom	\$98	\$97	\$43	\$40
Cuba	97	77	40	38
Germany	50	55	18	19
Canada	91	88	27	19
France	43	44	17	18
Argentina	61	37	25	18
Japan	53	37	26	16
Italy	35	33	16	14
China	27	22	12	10
Turkey	10	14	8	10
Switzerland	21	23	9	10
Belgium	39	42	8	8
Greece	12	14	7	8
Mexico	11	12	5	7
British India	40	34	8	7
Netherlands	22	21	7	7
Czecho-Slovakia	31	16	14	6

Import Restrictions. The wave of protectionism which swept over the world markets during the early part of the decade, found expression in three methods for the restriction of international trade—tariff increases, quotas, and exchange restrictions. These devices, in so far as they have been used in the United States, have been employed only to a limited degree. The latter form of restriction has not been used at all in this country, although extensively employed abroad. Since the passage of the Tariff Act of June 17, 1930, the first expedient has been employed in this country only in the form of taxes on imports included in the general revenue acts, and has been applied only to a very limited number of commodities. Quotas, moreover, have been employed by the United States as a tariff measure in only a comparatively few cases. The amount of import taxes collected in the fiscal year 1939 totaled \$14,971,061, as compared with \$14,825,087 in 1938. Of this amount, \$10,212,600 was collected on duty-free articles and \$4,759,461 on dutiable articles.

All import quotas, except those covering sugar other than Philippine, are administered by the Customs Service. These have been applied in only three ways—first as a limitation on the importation from the Philippines of a few conditionally free commodities in anticipation of the ultimate independent status of that region, second as a part of the trade agreement program in conjunction with a reduction in the rates of duty previously effective, and third to limit the importation of a commodity on which export subsidies are paid under the agricultural adjustment program. Only two of the quotas, those on Philippine cordage and red cedar shingles, established

an absolute limitation on importations. The other quotas provided that any importations in excess of the quota quantities would be dutiable at the rates specified in the tariff act. A recent departure in the administration of import quotas is the allocation of the quotas by countries. The first such allocation was made effective April 1939 in the case of the quarterly quota on beef cattle, and this method was also followed in the cotton and cotton waste, petroleum, and silver fox quotas.

Vessel, Vehicular, and Airplane Traffic. In order to perform properly the primary function of the Customs Service in collecting revenue on imports, customs officers examine the baggage and other belongings of all persons entering this country, as well as the means of transportation by which their arrival is effected. This necessitated, during the fiscal year 1939, the examination of 11,643,237 automobiles and busses, containing 33,519,803 passengers; 32,455 documented vessels, and 33,427 passenger trains, each class of which brought slightly more than 1,000,000 passengers into this country; and 132,328 ferries which carried 2,209,600 passengers. In addition, 10,578,528 pedestrians entered the country, 1,524,621 arrived by streetcars and other vehicles, 104,166 by undocumented vessels, and 52,786 in aircraft. The total number of persons entering this country from abroad aggregated 50,089,787 during 1939, a decrease of 2,797,231 from the previous year.

Ferry traffic exhibited a sharp decline from the previous year due to changed conditions at two border points, the discontinuance in July 1938 of the Detroit-Windsor ferry service and the completion in August 1938 of the Thousand Islands Bridge across the St. Lawrence, both of which caused a diversion of traffic formerly arriving by ferry. Although fewer persons arrived from abroad by air than by any other means, this form of transportation continued to increase in popularity, even though most of the other methods of transportation declined. More than half the total passengers by air arrived in this country at the port of Miami, Fla., and increases in number of airplane passengers were also recorded at most of the points along the Canadian border. On the other hand, airplane traffic from Mexico declined.

Enforcement of Customs Laws. Most of the customs collections other than duties consist of penalties imposed for attempts to evade customs requirements. Such collections aggregated \$2,030,875 in 1939 and \$2,539,162 in the previous year, the latter total being the largest in customs history. See NARCOTICS CONTROL.

BASIL HARRIS.

CYCLING. See SPORTS.

CYCLOTRON. See PHYSICS.

CYPRUS, sī'prūs. A British crown colony in the eastern Mediterranean. Area, 3584 square miles; population (1938 estimate), 374,654 as compared with 347,959 (1931 census). Most of the inhabitants profess the Orthodox-Greek Christian faith and belong to the Autocephalous Church of Cyprus. Mohammedans comprise about one-fifth of the population. During 1938 there were 11,704 births (31.2 per 1000), 5445 deaths (14.5 per 1000), and 3121 marriages (8.3 per 1000). Chief towns: Nicosia (capital), 23,677 inhabitants (1931 census); Limassol, 15,349; Larnaca, 11,872; Famagusta and Varosha, 9979; Ktima and Paphos, 4517; Kyrenia, 2137. During the school year 1937-38 there were 708 govern-

ment elementary schools with a total of 45,183 pupils enrolled; secondary education was given in about 34 schools.

Production and Trade. The main agricultural products (1938 production figures in parentheses) were wheat (54,900 metric tons), barley (41,400 metric tons), carobs (40,987 tons), cotton (1352.5 tons), olives (8282 tons), olive oil (1155 tons), tobacco (15.7 tons), potatoes (22,510 tons), onions (3047 tons), grapes (63,750 tons), and citrus fruits (403,147 cases of oranges and 53,833 cases of lemons exported during 1938). Livestock in the colony (1938): 586,377 (excluding lambs and kids). Sponge fishing is a minor occupation. The output of timber from the forests totaled 903,793 cu. ft. for 1938. Cupreous pyrites (762,482 tons in 1938), asbestos, gold, chrome iron ore, gypsum, and terra umbra were the chief minerals. In 1938 the system of roads extended 2557 miles. During 1938 (exclusive of specie), imports were valued at £2,246,435 (cotton manufactures, machinery, wheat flour, timber, woollen goods, and iron and steel manufactures were the chief items); exports, £2,478,256 (minerals accounted for £1,495,000).

Government. For the year ended Dec. 31, 1938, revenue (exclusive of grant-in-aid, £92,800) totaled £1,023,230; expenditure (exclusive of £92,800, the Cyprus share of the Turkish Debt charge), £908,024; public debt, £822,300. As a result of the political disturbances of 1931 (see NEW INTERNATIONAL YEAR BOOK for 1931; p. 250), the legislative council was abolished by Letters Patent of Nov. 12, 1931, and the governor was granted the power to legislate. The executive council (4 official members with 2 unofficial members appointed by the governor) was retained. During 1933 an advisory council was established. It now consists of 4 official members and 10 non-official members appointed by the governor. The advisory council, which meets in Nicosia under the chairmanship of the governor, has no legislative power but is consulted by the government on legislative and other measures. Governor and Commander-in-Chief, W. D. Battershill who succeeded Sir H. R. Palmer during August of 1939.

History. It was announced in the *Crown Colonist* (London) for July, 1939, that "a petition signed by thousands of people from all districts of the island, expressing dissatisfaction at present conditions and demanding a representative form of government, has been received by the government."

The Cyprus press was forbidden to publish or reprint from the English papers anything relating to the political situation in Cyprus. On July 5 newspapers were allowed for the first time for a month to reprint extracts from the United Kingdom press. The British Colonial Secretary, Malcolm MacDonald, said he "was satisfied that the great majority of the people of Cyprus were not discontented under the existing administration." He asked the new governor to review the situation. Control over foreign exchange was imposed through regulations made by the governor under the Emergency Powers (Defense) Act 1939, published Sept. 8, 1939.

CYRENAICA. See LIBYA.

CYTOLOGY. See BOTANY.

CZECHO-SLOVAKIA, čěx'ô-slô-vă'kî-â. A former Central European republic (capital, Prague), partitioned among Germany, Poland, and Hungary in 1938 and 1939, with the exception of part of Slovakia which became a nominally in-

dependent republic under German protection, with the capital at Bratislava.

Area and Population. On Jan. 1, 1938, the area of Czecho-Slovakia was 54,244 square miles and the estimated population 15,263,400 (14,729,536 at the 1930 census). Under the Munich Accord of Sept. 29, 1938, 11,071 square miles with 3,653,292 inhabitants were ceded to Germany. On Nov. 1, 1938, 419 square miles with a population of 241,698 were ceded to Poland. On Nov. 2, 1938, Hungary was awarded 4566 square miles with 1,027,450 inhabitants. These cessions left Czecho-Slovakia on Jan. 1, 1939, with an area of 38,180 square miles and a population (calculated on the 1930 census basis) of 9,807,096, divided by provinces as follows: Bohemia, 12,525 square miles, 4,472,353 inhabitants; Moravia, 6533 and 2,332,522; Slovakia, 14,848 and 2,450,096; Ruthenia (Carpatho-Ukraine), 4283 and 552,124, respectively.

Of the total population on Jan. 1, 1939, 8,527,154 were Czechs and Slovaks, 512,289 Russians, 377,830 Germans, 126,310 Jews, 100,379 Hungarians, 127,028 aliens and 31,949 others. A census of Dec. 31, 1938 in Slovakia showed 2,773,000 inhabitants. For the territorial changes taking place during 1939, see *History*.

The chief cities in the republic after the territorial changes of 1938, with their estimated populations were: Praha (Prague), 962,200 in 1937; Brno (Brünn), 291,800 in 1937; Moravská Ostrava, 178,099 in 1935; Bratislava (Pressburg), 170,668 in 1935; Plzeň (Pilsen), 124,353 in 1935. Vital statistics for 1938, including an adjustment for the cession of the Sudetenland, were: Living births, 243,564 (17.6 per 1000); deaths, 184,207 (13.5); marriages, 103,977 (7.2).

Education and Religion. Before the partitions, illiterates comprised 3.2 per cent of the adult population; they were chiefly in Slovakia and Ruthenia. The school attendance in 1937-38 was: Elementary, 1,728,950; higher grade schools, 459,975. In 1936-37 there were 154,768 pupils in secondary and technical schools, 40,860 in schools of commerce, 7207 in technical high schools, and 19,356 in four universities. At the 1930 census Roman Catholics numbered 10,831,696; Protestants, 1,129,758; Greek and Armenian Catholics, 585,041; Jews, 356,830.

Production. Agriculture, manufacturing, forestry, and commerce are the principal occupations. Yields of the chief crops in 1938 were (in metric tons): Wheat, 1,788,300; barley, 1,298,000; rye, 1,680,000; oats, 1,270,000; corn, 343,200 (1937); potatoes, 9,829,100; beet sugar (1938-39), 460,900; tobacco, 14,000 (1937); flax, 11,000 (1937). The 1937 wool clip was 1000 metric tons.

Industrial production included: Rayon (1938), 2430 metric tons; wood pulp (1937), 373,000 metric tons; cement (1936), 1,050,000 metric tons; electricity (1937), 4,000,000,000 kilowatt-hours. The 1938 mineral output was (in metric tons): Crude petroleum, 19,000; lignite and brown coal, 12,000,000; anthracite and bituminous coal, 13,800,000; salt, 181,000 (1937); iron ore (metal content), 595,000 (1937); pig iron and ferro-alloys, 1,234,000; steel, 1,761,000; lead (smelter), 4700 (1937); zinc (smelter), 7200 (1937); antimony ore (metal content), 1169 (1937). Textiles, shoes, glass, leather goods, and many other articles are manufactured on a large scale.

The national income in 1937 was estimated at 66,700,000,000 Czecho-Slovak crowns (about \$2,300,000,000). Approximately 35 per cent of the

national income was lost as a result of the 1938 territorial cessions.

Foreign Trade. Merchandise imports in 1938 were about 8,388,000,000 crowns (10,981,000,000 in 1937); exports, 9,204,000,000 (11,954,000,000). Germany, the United States, and the United Kingdom were the chief sources of supply and the leading markets.

Finance. The budget estimates of the Central Government for 1939 balanced at 3,191,600,000 crowns. For the autonomous administration in Bohemia and Moravia, the 1939 receipts were estimated at 4,638,000,000 crowns; expenditures, 4,902,000,000 crowns.

The national debt on Jan. 1, 1939, was about 54,000,000,000 crowns. The average exchange value of the crown was \$0.0347 in 1938. Effective Mar. 16, 1939, the German reichsmark was accepted as legal tender in the former provinces of Bohemia, Moravia, and Slovakia, the rate being 1 reichsmark to 10 crowns.

Communications. Railways in 1938 extended about 8650 miles, of which 8262 were state owned or operated; roads of all kinds (1939), 43,718 miles; national airlines, 6540 miles. In 1938 the two Czecho-Slovak airlines carried 61,216 passengers and 1289 tons of mail and freight. There is a heavy freight traffic on the Danube, Vltava (Moldau), and Elbe rivers. See **ROADS AND STREETS**.

Government. The Constitution adopted by the Czecho-Slovak National Assembly late in November, 1938, changed the state from a unitary to a federal republic. Autonomous governments were established for Bohemia and Moravia (capital, Prague), Slovakia (capital, Bratislava), and Ruthenia or Carpatho-Ukraine (capital, Huszt). Each "autonomous component" of the republic was granted a separate Diet, to be elected by universal suffrage of all persons over 21 and a separate Premier named by the President of the republic. The three Diets were to elect representatives to a National Assembly at Prague. (Pending election of these representatives the former Czecho-Slovak Parliament functioned as the National Assembly.) The National Assembly retained control of legislation covering the Constitution, foreign affairs, citizenship, emigration, transport, postal matters, national finance, and general economic affairs. It elected a Federal President with greatly increased powers. The provincial governments controlled all local affairs, including their own police and military forces. Federal President at the beginning of 1939, Dr. Emil Hácha (elected Nov. 30, 1938). Federal Premier, Rudolf Beran (appointed Dec. 1, 1938). Premier and Minister of Interior of Slovakia, Dr. Josef Tiso. Premier of Carpatho-Ukraine, Mgr. Dr. Augustin Volosin. For changes in 1939, see *History*.

HISTORY

Death of the Republic. The forces of disruption unleashed within Czecho-Slovakia by the Munich Accord of Sept. 29, 1938 (see 1938 *YEAR BOOK*, p. 193 f.) were actively undermining the shaken foundations of the republic at the beginning of 1939.

In the Czech provinces of Bohemia and Moravia the German minority and other anti-democratic elements, particularly the Czech Fascist party led by Gen. Radula Gajda, worked to discredit democratic institutions. They reinforced the steady pressure from Berlin designed to complete the

transformation of the Czecho-Slovak state into a political and economic dependency of the Reich. Foreign Minister Chvalkovsky, invited to Berlin on January 21, received Nazi demands for a Czech-German monetary and customs union, drastic reduction of the Czecho-Slovak army under supervision of a German military mission, formal abandonment of the mutual assistance pacts with France and the Soviet Union, and increased privileges for the German minority in Czecho-Slovakia. These demands were renewed a month later. In addition Berlin asked for one-third of the Czecho-Slovak gold reserves, the dismissal of all officials identified with the democratic Beneš regime, and the enforcement of more rigid anti-Jewish measures.

Meanwhile the Reich Government and the German minority in Slovakia and Ruthenia actively supported the separatist agitations in those provinces. The Slovak and Ruthenian leaders, more sympathetic with Berlin and with Nazi ideology than the Czechs, proved pliant instruments of German policy. In Slovakia, where Premier Tiso's Slovak People's party had established a full-fledged authoritarian regime late in 1938, Czech officials were dismissed early in 1939, and anti-Semitic laws were made more rigid. The Tiso Government established closer political and economic relations with Germany and adopted an increasingly independent attitude toward Prague. The Fascist Hlinka Guard, Storm Troops of the Slovak Government, demanded complete separation from the Czecho-Slovak republic. Similar tendencies revealed themselves in Ruthenia, where German agents were busily laying the foundations for a "greater Ukraine" under the protection of the Reich.

Czech Counter-Measures. Despite the weakness of their position after Munich, the Czechs strove desperately during the first months of 1939 to prevent the disintegration of the republic. In this effort they were supported by substantial groups in Slovakia opposed to the Tiso Government. But the coalition of internal and external enemies proved irresistible and in March came the tragic sequel to Munich.

On March 6 President Hacha sought to check the separatist movement in Ruthenia by inducing Premier Volosin to reorganize his government and eliminate the pro-German Deputy Premier, Julian Révay. A Czech, Gen. Lev Prchala, was named Minister of Finance, Railways, and Interior in Ruthenia, and immediately proceeded to curb separatist elements.

At the same time the Prague Government moved to check Slovak separatism by withholding financial assistance from the hard-pressed administration at Bratislava until the latter reaffirmed its loyalty to the republic. When Premier Tiso defied Prague, President Hacha on March 9 dismissed the Tiso Cabinet and declared martial law in Bratislava and other Slovak towns. Czech troops sent into Slovakia disarmed the Hlinka Guard and arrested Tiso and other Slovak separatist leaders. The disorders accompanying these events were continued on March 13 when Czech authorities in Slovakia attempted to prevent the German minority from beflagging their buildings with swastikas in memory of the Reich's World War dead.

Slovakia Proclaims Independence. The refusal of the Czechs to comply with Berlin's demands upon the Prague Government and President Hacha's attempt to resist German domina-

tion of Slovakia and Ruthenia provoked the long-dreaded Nazi intervention. On March 10 Tiso had smuggled out from the monastery in which he was interned a telegram requesting Hitler's assistance. Other fugitive Slovak leaders reached Vienna and the Nazis placed the radio station at their disposal for violent attacks upon the Prague Government. The German press unloosed a barrage of denunciation of Czech "barbarism" against the German minority.

On March 13 Tiso escaped from detention and flew to Berlin in a German plane accompanied by Franz Karmasin, leader of the German minority in Slovakia. After an interview with Hitler, Tiso returned immediately to Bratislava. On March 14 he presented to a secret session of the Slovak Parliament—which had been summoned by President Hacha on Hitler's demand—the German *Fuehrer's* promise of military support against Prague. About half the Slovak deputies were said to have opposed separation from the Czechs. But on Tiso's warning that such opposition involved personal danger, the Parliament declared Slovakia's independence and adopted a constitution that had been drafted by Tiso during his return flight from Berlin. Dr. Tiso became President and Premier of the new Slovak republic. By a treaty signed in Berlin March 23 the Reich undertook "to protect the political independence of the Slovak State and the integrity of its territory." The Slovak Government agreed to permit Germany to occupy and fortify a zone along the Polish frontier. Slovakia also agreed to "organize its own military forces in close collaboration with the German armed force," and to "conduct its policy in close collaboration with the German Government."

Subjugation of Bohemia-Moravia. Meanwhile on March 14 the Reich Government had made demands upon Prague that induced President Hacha and Foreign Minister Chvalkovsky to leave immediately for Berlin. Some sources assert that Hitler demanded their presence in the German capital; others that they went voluntarily to salvage what they could of Czech independence. Even before they arrived in Berlin at 1:10 a.m. on March 15 German troops had crossed the frontier and occupied the Czech cities of Moravská, Ostrava, and Vitkovice.

Hitler presented the Czech President with a demand for immediate dissolution of the republic under the threat of aerial bombardment of Prague. President Hacha yielded after a four-hour interview and, according to a Nazi communiqué, "trustfully laid the fate of the Czech people and country into the hands of the *Fuehrer* of the German Reich." Hitler immediately broadcast a proclamation to the German people declaring that Czecho-Slovakia had ceased to exist, and that due to "brutal excesses" against Germans he had "decided to allow German troops today to march into Bohemia and Moravia" and to "disarm terroristic bands and armed Czech forces supporting them."

German motorized columns were already pouring into the Czech provinces. By 9:15 a.m. of March 15 they entered Prague along with units of the German secret police who immediately began wholesale arrests of Czech nationalist leaders. That afternoon Hitler himself drove in triumph through the Czech capital and hoisted his banner over Hradschin Castle, residence of former Bohemian kings and Czecho-Slovak Presidents. The Czech populace, stunned by the sudden, ruthless blow at their national independence, received the

invaders in sullen, tearful silence. There were no demonstrations or disorders.

Protectorate Established. On March 16 a decree signed by Hitler and several of his Ministers declared Bohemia and Moravia a protectorate belonging "to the territory of the Great Reich." The protectorate was termed "autonomous" but "the sovereign rights appertaining to a protectorate" were to be exercised "in harmony with the political, military and economic needs of the Reich." Moreover the German *Fuehrer* assumed power to decree regulations for individual sections of the protectorate "in so far as the defense of the Reich demands." It was stipulated that the "supreme head of the autonomous administration of the protectorate . . . must enjoy the confidence of the *Fuehrer* and Chancellor" of the Reich.

Over the "autonomous administration" was placed a Reich Protector, with authority to dismiss the government of the protectorate, veto its measures, and promulgate decrees. A currency and customs union was established and the Reich assumed control of the foreign affairs, defense, communications, and police as well as blanket authority to "issue legal regulations in so far as common interests demand." Germans residing in the protectorate were made German nationals subject to the jurisdiction of the Reich and to the anti-Jewish Nuremberg laws. Other inhabitants were declared "subjects of the protectorate." In effect the Czech nation, politically one of the most advanced in Europe, was reduced to a quasi-colonial status.

Foreign Protests. The annexation of Bohemia and Moravia, contravening Hitler's promises to Prime Minister Chamberlain at the Munich Conference, called forth formal protests from the British and French Governments and led to the abandonment of the Chamberlain appeasement policy (see FRANCE, GERMANY, and GREAT BRITAIN under *History*). The United States, the Soviet Union and various smaller states refused to recognize the legality of the German action.

Hungary Takes Ruthenia. Meanwhile Hungary had seized upon Slovakia's defiance of Prague and the subsequent German invasion to annex the province of Ruthenia. On March 14 the Budapest Government demanded that the Czechs withdraw their troops from Ruthenia and arm the Magyar minority. Without waiting for a reply to the ultimatum, Hungarian troops invaded the province, which had followed Slovakia in deciding to declare its independence. The Czech forces under General Prchala surrendered but the resistance of the Ruthenian Fascist *Sitch* guards was broken only after some hard fighting. The incorporation of Ruthenia in Hungary was proclaimed in Budapest March 16. Once in control in Ruthenia, the Hungarian forces pushed westward across the ill-defined Ruthenian-Slovakian frontier on March 24 and drove Slovak troops out of 386 square miles of border territory before a protocol was signed on April 3 that confirmed Hungary's possession of the occupied zone. As in the regions acquired from Slovakia in 1938, the Hungarians immediately undertook to crush the Ukrainian nationalism that had taken hold in Ruthenia and to denationalize both Ruthenians and Slovaks in the newly conquered territory.

Nazi Rule in Bohemia-Moravia. Under the powers assumed with the establishment of the protectorate, the Reich proceeded to stamp out the remnants of Czech democratic institutions and

to exploit to the full Czech military, financial, and economic resources. The Czecho-Slovak Parliament was dissolved by President Hacha on March 21. In its place he appointed an advisory Committee of National Co-ordination composed of 50 relatively unknown men. It was not until April 27 that a cabinet for the protectorate was appointed, headed by Gen. Alois Eliash. The German Penal Code was officially imposed upon the protectorate by order of the Commander-in-Chief of the German Army on March 23. Baron Constantine von Neurath, former German Foreign Minister, arrived in Prague April 5 to assume the post of Reich Protector, and a civilian regime then replaced German military rule. Immediately thereafter began the disbandment of the remnants of the Czecho-Slovak army.

The Germans had already seized all Czech military equipment—sufficient to arm 1,500,000 men—including about 200 tanks and 1400 airplanes. It was valued at \$900,000,000. They took over the famous Skoda and other important armament works, owned by the Czech Government, and the important Czech gold and foreign exchange reserves. Czecho-Slovak Government reserves in the Bank of England totaling £6,000,000 gold were later transferred to the Reich. The properties and wealth of Jews and other fugitives or anti-Nazis were confiscated or transferred to German-controlled companies. It was charged that Nazi officials systematically looted safety-deposit boxes and other sources of treasure and turned the proceeds over to the party's treasury. In a speech delivered in New York on June 2, 1939, former President Beneš charged that the Nazi regime "has robbed and transported to Germany more than 35,000,000,000 crowns (\$1,225,000,000) of Czecho-Slovak property."

Reparation was exacted for the Coburg and other large German-owned landed estates distributed under the Czecho-Slovak land reform laws of the 1920's. Levies were made on the agricultural produce of the protectorate to increase the German food supply. In July German authorities ordered increased exploitation of the Czech forests and the delivery of more than half the timber to the Reich. Early in August title to a considerable part of the forests in Bohemia and Moravia was transferred to the German-controlled Land Reform Compensation Fund. On June 22 the Protector assumed power to control industry and draft Czech labor in case of war or a national emergency.

Economic exploitation was accompanied by increasingly drastic political repression and denationalization. Within five days after the German military occupation, the German secret police (Gestapo) were reported to have arrested 18,000 Czechs and arrests on a similar scale were resumed whenever opposition to German rule appeared to be gaining ground. To add to Czech humiliation, Karl Hermann Frank, a leader in the Sudeten German campaign against the republic in 1938, was named Secretary of State of the protectorate and on May 3 was placed in charge of both Czech and German police in Bohemia-Moravia. Many leading Czech officials were arrested or deprived of their posts, and the Czech police were gradually replaced by Germans.

All efforts of the "autonomous" Czech administration to follow an independent course were effectively discouraged. The Protector vetoed much legislation and delayed action on many other measures. The Germans declined to recognize many

appointments of the Hacha regime, rapidly extended their control over the democratically administered Czech municipalities, and adopted numerous measures to break Czech powers of economic resistance and survival. Thousands of skilled Czech workers were sent to Germany and their places taken by Germans. In towns where attacks upon Germans occurred, collective penalties were levied upon the people of the communities. German control of news sources and the virtual exclusion of foreign tourists and travellers from Bohemia-Moravia cut the Czechs off from all except underground contacts with the outside world.

Czech Resistance. To these German efforts to break the Czech national spirit and economic and political power, the people of Bohemia and Moravia opposed both active and passive resistance. The National Unity party, organized late in 1938, served as an instrument for establishing a Czech national front. The only legal political party in the protectorate, it adopted authoritarian principles in order to organize resistance to Germanism within the limitations imposed by Nazi rule. A membership campaign launched in April met an overwhelming response; over 2,000,000 men, or 97.4 per cent of those eligible, joined in answer to the appeal to demonstrate their Czech nationality. The slogan of the members was "I am and will remain a Czech." A number of small Fascist opposition groups were organized with German encouragement to contest the National Unity party's claim to Czech loyalties, but even these groups faded under appeals to Czech patriotism and anti-Germanism. The opposition Fascist leader, Radula Gajda, led most of his adherents into the National Unity party ranks.

From the beginning the Czechs evolved a collective passive resistance with which the Gestapo found it difficult to deal. There was widespread sabotage in plants and factories taken over by Germans. Farmers withheld and hid portions of their crops. A boycott of Germans and their products was organized. There were great pilgrimages to Czech national monuments and other patriotic shrines. Czech national songs were sung in defiance of a police ban. Religious festivals, church services, and all kinds of public programmes were seized upon for spontaneous demonstrations of national patriotism. Secret broadcasting stations and presses distributed anti-German propaganda and news of outside events. German officials and police encountered a wall of unspoken hostility and non-co-operation. There were a few attacks upon Germans, but these evoked stern measures of repression. The National Unity party formally protested the more drastic German infringements of Czech autonomy.

Beginning in May the Czechs also resorted to more active forms of resistance. Thousands of men fled across the closely guarded Polish border to join the Czech Legion organized by the former Czech commander in Ruthenia, Gen. Lev Prchala. Telephone lines of the German army in the protectorate were frequently cut. The Czech administration stubbornly opposed German demands that it assume responsibility for German-inspired legislation against the Jews or against Czech cultural and economic interests.

On September 20, Czech sources in London reported a wave of disorders in Bohemia and Moravia, accompanied by drastic repression. On October 26 reports of a German military collapse

precipitated riotous anti-German demonstrations in Tabor, Bohemia. Defying the orders of the Reich Protector, great demonstrations occurred in Prague and other Czech cities on October 28, twenty-first anniversary of the Czech declaration of independence. Huge crowds wearing black neck ties and armbands as a sign of national mourning paraded silently and for the most part peacefully through the capital. After nightfall there were clashes between police and Czech nationalists, in which a few persons were killed and some 40 wounded. Hundreds of arrests were made, and it was reported on November 2 that Czech workers had threatened a general strike if the prisoners were not released.

A clash between Czech students and Nazi Elite Guards in Prague on November 15 was followed by the execution of 12 students (some reports placed the total much higher), the arrest of more than 1000 others, the closing of Prague University for three years, and imposition of martial law in five districts. Numerous additional arrests were made in ensuing weeks.

A Berlin decree announced June 27 empowered the Reich Protector to issue decrees with the force of law at any time and to change existing Czech legislation considered contrary to German interests. Extensive preparations were made to deal with a possible Czech uprising or sabotage in time of war. Despite Hitler's guarantee of cultural autonomy, the Czech language and schools suffered from increasing restrictions. On July 11 Herr Frank ordered all the central administrative offices in Prague to use German as the original language in official correspondence, with Czech following in translation. On August 19 it was required that all communications between the Czech administration and the Reich Protector's office must be in German and that all public notices must be bilingual. At the same time a campaign was launched to induce Czechs having one parent or grandparent of German nationality to register as a German in the census of Germans in the protectorate then being taken. Germans were placed in control of the principal factories, banks, and business enterprises.

With the development of the Polish-German crisis beginning late in August, the members of the Czech administration were warned that they would be held personally responsible for acts of rebellion or sabotage. During subsequent months, censored news dispatches from Prague reported arrests of Czech leaders and politicians on charges of high treason and thwarting German plans. After the conquest of Poland (q.v.) hundreds of Jews were sent from Bohemia-Moravia to labor camps or the Jewish reservation in German Poland.

Toward the end of the year the growing food shortage, the diversion of Czech food supplies to Germany proper, and the progressive strangulation of Czech industries all served to intensify the unrest seething throughout Bohemia and Moravia. Czech industries were able to secure only a fraction of the raw materials needed even before the outbreak of the European war. Early in July it was reported that the protectorate's export trade to countries with free exchange was less than half what it had been at the time of the German occupation.

Czech Activities Abroad. Meanwhile Czech leaders who had escaped from the protectorate were organizing a campaign abroad for the restoration of their country's independence. Dr. Eduard

Beneš, the former President, was the guiding spirit of this movement. It received encouragement from the attitude of Britain, France, the Soviet Union, the United States, and other lesser powers, which refused to recognize the legality of Germany's annexation of Bohemia and Moravia.

Dr. Beneš announced at Chicago on April 18 that he was organizing a world-wide movement for liberation of his homeland. In British, French, and American capitals and large cities Czech diplomats and consular agents defied the orders received from Prague to turn over their legations and consulates to German authorities. Effective May 25 the German authorities revoked the diplomatic privileges and extraterritorial rights of foreign diplomatic and consular representatives remaining in Prague, thus forcing their governments to decide on the question of recognition. Some of them, such as France and Great Britain, recognized the annexation *de facto* but not *de jure*.

Previous to the outbreak of the European war, Dr. Beneš set up headquarters in London. On September 8 he declared war on Germany in the name of the Czech people. At the same time preparations were made to organize Czecho-Slovak Legions in France and Britain. By an accord with the French Government signed October 5 Czecho-Slovaks in France were authorized to raise an army of their own to fight under the direction of the Allied Supreme Council. General Prchala and about 1000 other survivors of the Czech Legion in Poland immediately enlisted in this force. The French Government on November 17 formally recognized the Czecho-Slovak National Committee, headed by Dr. Beneš and composed of five Czechs and three Slovaks, as the legal "government in exile." The British Government followed suit on December 21. An order mobilizing all Czech citizens between 18 and 50 years in France and elsewhere was posted December 2.

Events in Slovakia. The course of events in the new Slovak state was in many respects similar to developments in Bohemia and Moravia. There was a steady extension of German control and a progressive deterioration of the economic and financial situation, accompanied by the growth of anti-German sentiment and disillusionment with "independence."

The Slovak Government was in severe financial straits when it broke off relations with Prague, and subsequent months witnessed a rapid worsening of this situation. Slovak industries stagnated for lack of raw materials and export markets and because of the dislocations caused by gearing Slovakia into the Nazi economic empire. Employment of some 60,000 Slovak workers in Germany did little to relieve the situation. There was wide dissatisfaction with Premier Tiso's subservience to Berlin and with the reorganization of the country along Nazi lines. The government took drastic measures against Slovaks favoring continued collaboration with the Czechs. The unruly Hlinka Guard was reorganized early in April and "undesirable elements" charged with crime and racketeering were weeded out. Military conscription was introduced May 4. On May 31 a decree inducted all children from 6 to 19 years of age into the Hlinka Youth organization. Business and industry was brought under state control, with German advisers directing the Slovak officials in nominal charge of economic affairs. Most of the

anti-Jewish legislation in effect in Germany was introduced.

On July 21 the Slovak Parliament adopted a new constitution making Slovakia an authoritarian republic. The Constitution called for a Parliament of 80 Deputies elected for five years, and a National Council of 10 members. The National Council, which included representatives of minorities, exercised wide executive powers through Dr. Tiso, its chairman, acting as Chief of State. It also had authority to legislate by decree without ratification by Parliament. On October 26 Dr. Tiso was elevated to the Presidency and Bela Tuka succeeded him as Premier.

Slovak nationalism came into conflict with the small German and Hungarian minorities in Slovakia as well as with the Czechs. Complaints of the German minority received effective backing from Berlin, particularly after Germany on August 18 took military possession of all of Slovakia "in order to protect it from Polish aggression." A Slovak-German military agreement ratified the same day placed the Slovak army and reserves under German command, and they were drafted to serve with the German army of some 300,000 men concentrated in Slovakia during the ensuing war upon Poland.

The Slovak Government actively supported the German claims upon Poland, although Slovak leaders in Warsaw and London denounced this as the action of a puppet government manipulated from Berlin. Beginning August 14 Slovak officials demanded restoration of the Javorina district taken from Slovakia by Poland in October-November, 1938. Slovak troops participated in the invasion of Poland beginning September 1, although the alliance with Germany was widely unpopular. Ten thousand deserters from the Slovak Army were reported to have been interned in Hungary during August and September, and many others deserted into Poland. The German victory led to the return of 225 square miles of territory with approximately 45,000 inhabitants to Slovakia. On September 28 Premier Tiso sent Chancellor Hitler a telegram of thanks for the "protection" he had afforded Slovakia. But a month later it was reported that mounting anti-German activity in Slovakia had resulted in the arrest of many leading Slovaks.

The Slovak state remained unrecognized by the anti-German powers but the appointment of a Soviet Minister to Bratislava was announced in Moscow December 19.

See FASCISM.

DAGHESTAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

DAHOMY. See FRENCH WEST AFRICA.

DAIRYING. The rise in commodity prices, improvement in business, and a higher level of consumption of dairy products toward the end of the year, were reflected in an improved dairy situation in 1939. Although milk production showed some decline during the last part of the pasture season as compared with 1938, consumption of manufactured dairy products was distinctly higher. An important factor in the increased consumption was the distribution of butter for relief. During 1939 the Dairy Products Marketing Association purchased about 12,000,000 lb. of butter, but the butter purchases in 1938 were about 114,000,000 lb. All of this was disposed of late in 1939. A total of only 17,600,000 lb. of butter was held by all government agencies,

including the Dairy Products Marketing Association on December 1.

Milk production per cow was only slightly less than in 1938, but the number of cows on farms was larger. Evidently total milk production was practically equal to the record high for 1938, and in the late fall, milk production was very heavy. The large supplies of feed in the fall and winter of 1939-40 suggested high production for the winter feeding period and pointed toward larger numbers of milk cows for 1940.

Pasture conditions were somewhat less favorable in 1939 than in 1938 and declined rapidly during September with about 12 per cent less milk production. Feed grain production of 95,000,000 tons was less than in 1938. However, an increase to 110,000,000 tons was estimated, including the carry-over for 1939-40. In general, fluid milk consumption was consistently higher than in 1938, and was high in relation to production the first part of the year.

Production in excess of consumption of the principal manufactured products was less than in 1938, in part because of the unusually heavy consumption of fluid milk. In contrast with the reduced production of manufactured products, consumption of butter was high, partly due to large distribution of butter for relief.

Total cold storage holdings of butter on November 1 were 128,000,000 lb., which were 34 per cent less than the heavy stocks a year earlier, due to smaller holdings of only 21,200,000 lb. by government agencies, as compared with 111,700,000 lb. on the corresponding date of 1938. Stocks in the hands of the trade were 106,900,000 lb. on November 1, as contrasted with 103,800,000 lb. a year earlier. Production of the principal manufactured dairy products was less in the late summer than in 1938; while apparent consumption was larger. Although some increase was accounted for in the distribution of butter for relief, there was a marked increase in the butter distributed through regular trade channels, as well as in the apparent consumption of cheese and evaporated milk. Stocks of all manufactured dairy products in cold storage were well below those of 1938. Stocks of American cheese in storage on December 1 were 19 per cent less than a year earlier and the lowest since 1932. The decline in butter, cheese, and evaporated milk in storage after allowing for seasonal changes to just about average was an important factor in strengthening the price of dairy products.

Retail prices were higher, an indication of the larger consumer expenditures for butter, particularly during the last part of the year. A marked reduction in manufacturers' stocks of evaporated milk in the fall indicated considerable forward buying. The price of cows in relation to hay and grain prices was the highest in more than 30 years of record.

Smaller exports of condensed and dried milk were offset by increased exports of butter and cheese. Cheese imports were also larger. Excesses of imports of butter over exports experienced in 1938 were changed to an excess of exports. With the outbreak of war, exports of evaporated milk were increased to Great Britain and other belligerent countries. More than 26,000,000 lb. of evaporated milk and 6,000,000 lb. of dried milk were exported during the year.

Important developments of the year in the fluid milk end of the dairy industry were the decisions the U.S. Supreme Court rendered on June 5,

upholding the constitutionality of the Agricultural Marketing Act of 1937 and the validity of the Federal Milk Control plans in the New York and Boston marketing areas. Important points contested in the New York and Boston milk cases were the right of the Federal government to fix minimum prices to producers of milk moving in interstate commerce and the right of the Federal government to establish a program including the principle of equalization.

Research. The U.S. Bureau of Dairy Industry and the State Agricultural Colleges and Experiment Stations were engaged in scientific research programs with the objective of greater efficiency and economy in milk and butterfat production, improvement in the sanitary and nutritive quality of milk and the various products manufactured from it, and the discovery of additional uses for milk products. These studies made evident the proportion of dairy cattle that prove unprofitable, and showed the economy of culling the herds. Through the application of genetic principles, to cattle breeding, a steady rise in the average milk production of the herds followed. There was a diminishing percentage of low and non-profitable animals in the herds.

In addition, better feeding practices were developed and studies made of the utilization of home-grown feeds, improvement of pastures, better curing of hay, and wider use of the silo to preserve perishable feeds. These studies have emphasized a need for adequate feeds if the health and reproductive ability of the cow are to be maintained. Experiments with small laboratory animals were frequently needed to show the role of minerals and vitamins in the rations, and their effect on the nutritive properties of the dairy products.

In studies of additional uses of the dairy products, methods were found in the U.S. Bureau of Dairy Industry for the use of whey in candy, soups, and bakery products. By a new process, casein may be separated from skim milk and used as an adhesive or may be used as lactic acid, or converted into a rubber-like resin with wide industrial uses.

In studies at the National Institute for Research in Dairying, in Reading, England, attempts were made to develop tests that would differentiate milk from cows with subclinical cases of mastitis from normal milk. In these tests, casein number ranked first in indicating mastitis milk, followed in order by chloride content, amount and character of the centrifuge deposit, solids not fat content, bromo-cresol purple reaction, bromo-thymol blue reaction, presence of clots, and catalase content. Within certain limits, the phosphatase test was found applicable as a test of the efficiency of pasteurizing ice-cream mixes. However, it was found necessary to establish standard phenol values for complete pasteurization at various temperatures. Coloring and flavoring materials also affected the accuracy of the test.

The Massachusetts Agricultural Experiment Station investigated the effect of feeding a cod-liver-oil supplement to dairy heifers on growth and reproduction. Although the results were not entirely conclusive, the addition of concentrate to a ration was recommended as an insurance against trouble due to a deficiency of this vitamin, particularly when the roughage was of poor quality.

The Florida Agricultural Experiment Station

found much similarity between the symptoms exhibited by calves on cottonseed-meal rations and by calves on rations deficient in carotene.

In a series of experiments the New Jersey Agricultural Experiment Station found that through inbreeding and the practice of rigid selection, the percentage of fat could be increased in the milk produced by Holstein-Friesian cows. Deleterious effects on the size and growth records of the animals produced must be guarded against to prevent a possible unfavorable weakening of the herd as a result of promiscuous inbreeding.

Bibliography. A few selected references to works of special importance appearing during the year are the following: *Inbreeding and Outbreeding Holstein-Friesian Cattle in an Attempt to Establish Genetic Factors for High Milk Production and High Fat Test*, J. W. Bartlett, R. P. Reece, and J. P. Mixner (N. J. Agr. Exp. Sta. Bul. 667 (1939), pp. 31); *Dairy Science*, W. E. Petersen (J. B. Lippincott Co. (1939), pp. 679); *Studies on the Metabolism of Calcium and Phosphorus and on the Availability of These Elements from Milk and from an Inorganic Source*, K. M. Henry and S. K. Kon (Reading, England; Jour. Biochem. 33 (1939), pp. 173); *Dairy Science Abstracts* (Published Quarterly, Vol. 1, No. 1 (1939), Imperial Bureau of Dairy Science, Shinfield, Reading, England); *Standard Methods for the Examination of Dairy Products* (New York, N. Y.); and *Report of the Chief of the U.S.D.A. Bureau of Dairy Industry for the Year Ended June 30, 1939*, O. E. Read.

GEORGE HAINES.

DAKAR. See FRENCH WEST AFRICA.

DAMAN. See PORTUGUESE INDIA.

DAMS. The year has been a most active one in dam construction, with the majority of the work, as has been the case in recent years, of Federal origin and in the hands of either the U.S. Bureau of Reclamation or the U.S. Engineer Corps of the Army. A Reclamation Bill totaling over 60 million dollars was signed by the President in May and thus continued at a high scale of activity a bureau that, ten years ago, seemed to have exhausted its resources and opportunities for new constructions. Two great works of this Bureau top the list of outstanding dam constructions of the year.

At Grand Coulee, on the upper Columbia River, work went rapidly forward on the construction of this tremendous undertaking. Plans and plant were described in the YEAR BOOK for 1938. The concreting plant for this work is one of the most gigantic temporary manufacturing plants ever built and has set new records during the year. In May a record of 20,684 cu. yd. of concrete was placed in one 24-hour period. Later in the year another record was made when almost 400,000 cu. yd. was placed in one month. Winter conditions may, of course, much reduce and then probably suspend concreting until spring, but various methods of cold weather placing have been in use.

The main features of the giant Shasta Dam were noted in the 1938 YEAR BOOK. Located high up the Sacramento River, just below the point where the Pit River joins this stream, the Shasta dam is one of those great structures which has as its only rivals the record breaking Boulder and Grand Coulee constructions.

While there was active navigation on the Sacramento River in the early days and boats of 13 ft. draft plied between San Francisco and Sacra-

mento, as a result of the accumulation of the debris of hydraulic mining on the tributaries of this river and of exceptional floods, the channel became badly blocked. Work has been under way for some years under the California Debris Commission (organized 1893) and a 10 ft. channel has been secured below Sacramento by using wing dams and dredging. The difficult flood-channel problem at Sacramento has also been under development. The Shasta dam is expected to do much in reducing flood peaks and, through release of stored water during low river flow, in aiding the canalization of the river up to Colusa (6 ft.) and Chico Landing (5 ft. channel depth). It is expected that the products of the valley—rice, barley, fruits—would justify a new development of navigation for trans-shipment at the San Francisco waterfront. The Shasta dam is thus part of a comprehensive plan of uncertain but promising economic value and importance.

The plant which is being constructed for this great work is unusual in design and unique in size. A belt-conveyor almost 10 miles long, the longest in the world, is being built to convey the aggregate (inert materials in concrete) at the rate of 100 tons an hour, to the dam site. A radial system of cableways, centering in a huge steel tower 460 ft. high (about the same height as the towers of the San Francisco-Oakland suspension bridges) will reach all parts of the structure. It is expected that concreting operations will begin by March, 1940.

It is also interesting to note that the railroad relocation problem involved in this undertaking includes the construction of a 5-million-dollar bridge over one arm of the reservoir. This will be a combined railroad and highway structure of the cantilever truss type with a center span of 630 ft. and requires the highest piers of any bridge in the world. Two of these will be over 350 ft. high. A tunnel around the dam site has been completed and will be used by the railroad, pending completion of the relocated line and, later, as an outlet for the dam.

Another notable western construction is the Ruby Dam, third step in the development of Seattle's hydro-electric system on the Skagit River. This has been renamed the Ross Dam and has posed great transportation difficulties for the builders. It is located at the head of the Diabolo reservoir (see previous YEAR BOOKS) and men and material have been brought to the isolated and inaccessible site by boats, using this reservoir as a waterway.

Still another interesting project is that of raising the height of the O'Shaughnessy Dam some 85 ft., thus providing an additional storage capacity of about 75 per cent that of the existing reservoir. Part of the Hetch Hetchy water supply for San Francisco, the foundations of this dam were built so as to allow this increase and this dam will thus become among the greatest in the world with a total height of 430 ft.

A similar situation exists at the Marshall Ford Dam on the Colorado River, now nearing completion by the U.S. Bureau of Reclamation for the Lower Colorado River Authority. It is hoped to proceed at once with an increase in height of 78 ft.

The Conchas Dam (see YEAR BOOK, 1938), is also nearing completion by the U.S. Engineers on the South Canadian River in New Mexico, 180 miles east of Santa Fe. Similarly the Bartlett Dam of the U.S. Bureau of Reclamation Salt River project on the Verdi River in Arizona, is expected to be completed by mid-summer, 1940.

It will be the highest multiple arch dam in the world, 270 ft.

In the central South the work of the TVA goes rapidly forward. The Chickamauga dam on the Tennessee River above Chattanooga is in the last stage of construction. An interesting rock-crushing operation is under way for the Hiwassee Dam, and the greatest of the TVA dams, Gilbertsville, is also under construction. Located on the Tennessee, 23 miles above its junction with the Ohio, Gilbertsville will cost about 90 million dollars, the cost being about equally divided between land, dam, and railroad and highway relocations.

Earth Dams. The remarkable development in earth dam construction continued during the year. Engineers were, of course, much interested in the official report on the great (5 million cu. yd.) slide at the Fort Peck Dam. The failure was attributed previously to a displacement of the foundations under the superimposed load. Nevertheless the loss of embankment was made good, and, on November 5, the hydraulic dredges practically completed their part in this construction and were stopped. The upper 25 ft. of the fill will be placed by the rolled fill method, taking the material from the downstream slope.

Another dam failure of last year—the Marshall Creek dam near Kansas City—also attributed to poor foundation conditions, is being reconstructed by WPA forces under Army engineers. This time the clay bottom will be stripped to rock, lower slopes will be used, and increased spillway will be provided.

The Nebraska Public Power and Irrigation operations have raised much discussion in the power field and they have also had to meet difficult construction problems. The Kingsley Dam of the Central District is one of the giants of recent earth dam constructions. On the North Platte near Ogallala, Neb., this dam requires 26 million cu. yd. of fill. The spillway and outlet works are practically completed and work is under way on placing the fill, two 30-in. hydraulic dredges being employed. One contract calls for a million pre-cast rip-rap blocks for protecting the upper face of the structure.

The Sardis Dam, on a tributary of the Yazoo River (which enters the Mississippi near Vicksburg), is interesting both because it is the first retention reservoir construction for flood control on the lower Mississippi and because of its size. An embankment $2\frac{3}{4}$ miles long is required and almost 18 million cu. yd. of fill will be necessary. This places it next in size to Fort Peck and Kingsley.

An unusual type of dam to use in a comparatively narrow canyon, the Mad Mountain Dam on the White River near Enumclaw, 47 miles southeast of Seattle, will also be of record-breaking height, 420 ft. It is under construction by the U.S. Engineers and is to be rolled earth fill. On the other hand, the Hansen Dam, on Tujunga Wash near Los Angeles, will not be of record height but will involve the largest fill—13 million cu. yd.—ever placed by the dry, rolled earth fill method.

Plans have just been approved, however, for the construction of a rolled earth dam on the Red River near Denison, Tex., which will require $15\frac{1}{2}$ million yards of rolled earth fill. This work will thus exceed even the Hansen project. The height is to be 165 ft. and the work will be under the U.S. Engineers Corps.

Buttress Dams. In addition to the Bartlett Dam which has already been noted as a record

structure, two other dams of this type are of great interest.

The Pensacola Dam, for power and flood control on the Grand River, at Pensacola, Okla., is also a great multiple arch structure. It is being built by the U.S. Engineers for the Grand River Dam authority at one of three sites which have been under study. Fifty-one arches of 60-ft. span between hollow buttresses of a maximum of 152 ft. in height and with an 860-ft. gravity-section spillway are being used. The work is almost three quarters completed.

Twenty-five miles north of Mineral Wells, Tex., another remarkable structure is under construction. This dam is a slab and buttress type with massive solid buttresses from 9 to 10 ft. thick. Intended for flood control, water conservation and power, the Possum Kingdom Dam, as it is called, is one of a possible 13 dams to be built on the Brazos River and its tributaries. It is 2740 ft. long and will have a maximum height of 189½ ft. Construction is well advanced.

To one who follows dam construction it thus seems that every possible site for a dam is being explored and that any structure which can show any possible reason for construction is being exploited in this amazing period of dam construction.

See RECLAMATION, BUREAU OF; TENNESSEE VALLEY AUTHORITY; COLORADO, OREGON.

JAMES K. FINCH.

DANISH LITERATURE. See SCANDINAVIAN LITERATURE.

DANZIG, dān'tsik, FREE CITY OF. A territory including the Baltic port of Danzig at the mouth of the Vistula River, which was detached from Germany and constituted a Free City under the protection of the League of Nations by Article 102 of the Treaty of Versailles. It was restored to Germany on Sept. 1, 1939.

Area and Population. Area, 754 square miles; estimated population in 1938, 407,000, including 258,000 in the city of Danzig. The people were German-speaking, with the exception of a Polish minority of about 10,000. Living births in 1937 numbered 8807; deaths, 4732; marriages, 3456. The school enrollment in May, 1938, was: Elementary, 50,795; middle, 3766; high school, 5207; the Technical University, 1244.

Trade and Communications. Danzig formerly handled practically all of the sea-borne trade of Poland and adjoining regions of North Central Europe. Beginning in the 1920's, it was forced to share this trade with the newly constructed Polish port at nearby Gdynia. During 1938 6601 vessels of 4,768,000 net registered tons and a cargo of 1,564,000 tons entered at Danzig; the tonnage of goods exported by sea was 5,563,200. The sea-borne trade of Poland passing through Danzig in 1938 was 5,972,000 tons valued at 376,000,000 zlotys; through Gdynia, 8,712,000 tons valued at 1,183,000,000 zlotys. Four main railway lines connected Danzig with Germany and three main lines with Poland. Airlines linked the port with Warsaw, Berlin, and Königsberg and there were shipping services to the principal ports of the world.

Finance and Government. In ordinary budget estimates of the Free City for the fiscal year ending Mar. 31, 1940, receipts and expenditures balanced at 126,880,000 gulden (119,002,000 gulden in 1938-39). The foreign consolidated debt on Mar. 31, 1938, totaled 37,000,000 gulden. The value of

the gulden during January-September, 1939, was about \$0.1881. Transfer of service on all foreign loans of the Free City was suspended in July, 1939.

Government. Previous to annexation by Germany, the Free City was an independent state except for the following limitations imposed by the Treaty of Versailles and a supplementary Danzig-Polish treaty: (1) Danzig was within the Polish Customs frontier; (2) the harbor of Danzig was administered by a board composed of an equal number of Poles and Danzigers with a neutral president, usually appointed by the League of Nations; (3) foreign relations were conducted by Poland in consultation with representatives of the Free City, and (4) the railways connecting Danzig and Poland were part of the Polish State Railways.

Under the Constitution a Diet of 72 members, elected by universal secret suffrage for four years, in turn chose a Senate of 12 members. The Senate was the highest state authority and its President was general executive head of the Free City. The League of Nations and Poland were represented by High Commissioners. The National Socialist party of Danzig gained control of the government beginning in 1934 and in the ensuing years eliminated all opposition parties except the Polish minority group and established an authoritarian regime based on Nazi principles and working in close collaboration with the Berlin Government. President of the Senate at the beginning of 1939, Arthur Greiser. High Commissioner of the League of Nations, Dr. Karl Burckhardt (Swiss). For changes in 1939, see *History*.

HISTORY

The Nazi demand for the restoration of the Free City of Danzig to the Reich was one of the immediate issues that led to the German-Polish conflict of September, 1939, and involved Britain and France in war with Germany (see FRANCE, GERMANY, GREAT BRITAIN, and POLAND under *History*); EUROPEAN WAR.

German Dissensions. The Germans of Danzig were not a unit in their desire to return to Germany. A substantial group of former Social Democrats and other anti-Nazis continued to protest Nazi aims and principles despite repeated arrests of their leaders and other forms of repression. On April 20, the 50th anniversary of Chancellor Hitler's birthday, the Nazi party leader in Danzig, Albert Foerster, and representatives of the Danzig government presented to the Chancellor in Berlin a deed making him an honorary citizen of Danzig. The same day Danzig was flooded with leaflets distributed by anti-Nazi Germans ridiculing Hitler and National Socialism, and there were clashes between Nazi and anti-Nazi groups. Again on July 20 the Danzig police arrested more than 20 former Social Democrats and other Marxists charged with planning a campaign of sabotage to prevent reincorporation of Danzig in the Reich. Additional arrests of anti-Nazis preceded the outbreak of the German-Polish war.

Conflict with Polish Minority. The efforts of Danzig Nazis to curtail Polish treaty rights in the Free City and eliminate the Polish minority had caused much bitterness during 1938 (see 1938 YEAR BOOK, p. 206). In January of 1939 the task of eliminating the Jewish community in Danzig was virtually completed with the deportation of 1000 Jews on a sealed train. Nazi pressure upon

the Polish minority was then intensified. Several weeks of clashes between Polish and German students in the Technical College culminated in the forcible expulsion of the Polish students by uniformed Nazis on February 24.

When Poland in March rejected Hitler's proposal for immediate return of the Free City to Germany, both Germans and Poles began to prepare for a resort to arms. With Danzig demilitarized and strong Polish forces concentrated near the Free City borders, the Danzigers were in no position to offer effective armed resistance to a Polish invasion. Consequently while proclaiming their determination to rejoin the Reich, they postponed reunion at Hitler's orders until the latter had completed his military and diplomatic preparations for the destruction of Poland.

The months from March to September were occupied in secretly arming and preparing for the defense of the city while exerting every sort of pressure short of open warfare to curb Poland's treaty rights and influence in the territory. There were repeated assaults upon Polish citizens, restriction of their political, social, and economic activities, and other forms of harassment. The Poles retaliated by diverting more of their trade to Gdynia and by other forms of economic pressure. Polish participation in the Danzig harbor administration, the customs and the schools were sources of chronic controversy.

In June the Nazis began to display a more defiant attitude toward the Poles. Polish officials in Danzig were boycotted. Some Polish customs inspectors were beaten up and arrested. The demilitarization provisions of the Danzig Statute were openly violated when 8000 young Nazis paraded with arms smuggled in from Germany. A Danzig "Free Corps" was organized as a substitute for the regular army. In the middle of July some 2000 German Storm Troopers, known for the rôle they played in the Sudetenland agitation against Czechoslovakia in 1938, arrived in Danzig. At the same time 4000 extra "policemen" were brought in from Germany.

Reunion Proclaimed. In August signs multiplied that Berlin had authorized the Danzig Nazis to prepare for early union with the Reich. There were numerous demonstrations, addressed by leading German officials. The Danzig Government issued a regulation forbidding Polish customs officials to exercise their functions in the Free City. On August 22 Dr. Hans Frank, German Justice Commissioner and Cabinet Minister, told the German Lawyers Association meeting in Danzig that the treaty provisions under which the Free City was established were null and void. On August 30 all communications between the Free City and Poland were cut and on September 1, coincident with the German invasion of Poland, Herr Foerster issued a decree proclaiming the annexation of the Free City to the Reich and appointing himself sole administrator of the territory. The Danzig Constitution was immediately suspended.

Immediately after this proclamation was issued, Foerster telegraphed Chancellor Hitler begging him "in the name of Danzig and its population to consent to this basic state law and to carry out the reunion with the German Reich through Federal law." Hitler telegraphed an immediate reply thanking Foerster and the Danzigers for their loyalty, stating that "the law for reunion is ratified forthwith," and appointing Foerster head of the civil administration of Danzig.

The War in Danzig. According to the Ger-

man general staff, the Polish military plan called for immediate occupation of Danzig in the event of war with the Reich. German preparations to prevent this were effective and Danzig escaped the ravages of warfare. However a small Polish force in Westerplatte Fortress in Danzig Harbor, against which the first shot of the Polish-German war was fired, held out against German land and air attacks and bombardment from the German naval vessel *Schleswig-Holstein* until September 7.

After the defeat of the main Polish armies, Hitler made his triumphal entry into Danzig on September 19. He was thunderously acclaimed as "liberator" of the territory.

DARTMOUTH COLLEGE. A nonsectarian institution for the higher education of men in Hanover, N. H., founded in 1769. The 1939 autumn session had an enrollment of 2431 students. There were 264 members of the faculty. The endowment amounted to \$17,612,715, while the total income for the year was \$1,901,602. The Fisher Ames Baker Memorial Library contained 497,009 volumes. President, Ernest Martin Hopkins, LL.D.

DAUGHTERS OF THE AMERICAN REVOLUTION, a patriotic society of women, organized in Washington, D. C., in 1890. In substance its objects are as follows:

(1) Historical, the perpetuation of the memory and spirit of the men and women who achieved American Independence through protection of historic spots, encouragement of historical research regarding the American Revolution, preservation of records and celebration of patriotic anniversaries.

(2) Educational, the promotion of "institutions for the general diffusion of knowledge," thus affording to young and old such advantages as shall develop in them the largest capacity for performing the duties of American citizens.

(3) Patriotic, to cherish, maintain, and extend the institutions of American freedom, to foster true patriotism and love of country, and to aid in securing for mankind all the blessings of liberty.

Eligibility for membership depends upon direct descent from a man or woman who, with unflinching loyalty, aided in achieving American Independence.

Active membership exceeds 143,000 in 2500 chapters in this country and abroad. President General, Mrs. Henry M. Robert, Jr. Headquarters, Memorial Continental Hall, Washington, D. C.

DAVIES, JOHN VIVOND. An American engineer, died in Flushing, New York, Oct. 4, 1939. Born in Swansea, South Wales, Oct. 13, 1862, he studied at Wesleyan College, Taunton, and the University of London. He was associated with Parfitt & Jenkins during 1880-88 and then came to the United States, where he became associated with Charles M. Jacobs on various machinery jobs and, in 1893, the digging of the first tunnel under the East River, the Ravenswood Gas Tunnel for the East River Gas Co. In 1894 he entered into partnership with Jacobs under the name of Jacobs & Davies, Inc., consulting engineers. In 1917, Mr. Davies succeeded to the presidency of the company.

During his long association with the firm, Mr. Davies was chief engineer in charge of the design and construction of the West Virginia Short Line Railroad and the Kanawha & Pocahontas Railroad in West Virginia (1898-1900), chief engineer of the Atlantic Avenue improvement for the Long Island Railroad (1901-07), construction engineer for 26 aqueduct tunnels in Mexico (1912-13), engineer in charge of the

Astoria Tunnel of the Consolidated Gas Co. of New York (1910-16), engineer in charge of the construction of the Hales Bar Dam across the Tennessee River at Chattanooga (1910-13), and engineer in charge of construction intake and discharge tunnels of the New York Edison Co. (1918-19). From about 1900 he was associated with the predecessors of the Hudson & Manhattan Railroad Co., and designed and built the four tunnels under the Hudson River and New York, connecting Jersey City and Hoboken with New York, for that railroad. He was its chief engineer for many years, and in 1913 was elected a vice president of the Railroad.

One of the leading men in his profession, Mr. Davies served as a member of the board of consulting engineers of the New York State Bridge and Tunnel Commission and of the New Jersey Interstate Bridge and Tunnel Commission. He was president of the United Engineering Society during 1920-23 and received the Telford gold medal (1914) of the Institute of Civil Engineers and the Norman Gold Medal (1913), the Thomas Fitch Rowland Prize (1917), and the Fowler Professorial Award (1930) of the American Society of Civil Engineers.

DEATHS AND DEATH RATES. See NECROLOGY; VITAL STATISTICS.

DEBTS. See PUBLIC FINANCE for United States debt; articles on foreign countries under *Finance*; REPARATIONS AND WAR DEBTS.

DEFENSE. See CONGRESS, UNITED STATES: MILITARY PROGRESS; NAVAL PROGRESS.

DELAWARE. *Area and Population.* Area (1930, later revised to include a gain of 64 square miles of water through a revision of the New Jersey boundary), 2434 square miles; included water, 469 square miles. Population: Apr. 1, 1930 (census), 238,380; July 1, 1937 (Federal estimate), 261,000; 1920 (census), 223,003. Wilmington had (1930) 106,597 inhabitants; Dover, the capital, 4800.

Agriculture. Farmers in Delaware harvested, in 1939, 361,000 acres of the principal crops; about four-fifths of this total was in corn, wheat, and tame hay. Corn, on 144,000 acres, made 4,176,000 bu. (estimated value on the farm, \$2,589,000); wheat, on 72,000 acres, 1,296,000 bu. (\$1,076,000); tame hay, on 72,000 acres, 91,000 tons (\$1,019,000). Apples gathered for market yielded 1,750,000 bu. (\$1,225,000); peaches, 422,000 bu. (\$338,000). Sweet potatoes, on 5000 acres, gave 675,000 bu. (\$506,000).

Manufacturing. In Delaware were 359 manufacturing establishments in 1937 (in 1935, 339), employing 21,052 wage-earners (in 1935, 16,532), who received \$22,991,808 in wages (in 1935, \$15,259,295). The manufactured products amounted to \$124,383,887 (for 1935, \$83,015,313). New Castle County provided about nine-tenths of the manufacturing production, and Wilmington, chief city of that county and of the State, manufactured in 1937 goods to the value of \$69,740,028.

Education. For the academic year 1938-39 Delaware's inhabitants of school age were estimated to number 52,300. The year's enrollments of all pupils in the public schools totaled 44,538; this included 409 in kindergartens, 20,977 in the elementary group, and 16,538 in high schools. The year's expenditure for public-school education amounted to \$4,473,909. The public schools' teachers, 1682 in all, received \$1544 a year in average salary.

Legislation. The regular biennial session of

the General Assembly, convening in January, held Republican majorities in both houses, sufficiently strong to overthrow if desirable, vetoes by the Democratic Governor. There were enacted laws for an income tax, to include Federal salaries in its application; a measure making the "blue hen's chicken" (nickname of the Delaware Revolutionary soldier) the State's official bird; and a bill allowing Wilmington to vote whether to permit the showing of commercial moving pictures on Sundays; but this one last bill was vetoed. Increases of salary were granted to teachers in the public schools, on the basis of length and fidelity of service.

Political and Other Events. The City of Wilmington celebrated, with ceremonies started by a parade on November 16, the 200th anniversary of the granting of Wilmington's royal charter as a borough by George II of England in 1739. A State commission, created by the Legislature, made a study of obsolete or unenforced statutes, particularly the "blue" laws prohibiting activities of hotels, street cars, filling stations, and many other conveniences on Sundays; Attorney-General Morford urged that this commission propose the summoning of a special session of the Legislature to repeal such laws. The Federal and other payments for public assistance of all sorts to the indigents outside of institutions in Delaware ran, for June, to somewhat less than \$1,000,000; they were the smallest for any State, and among the least in proportion to population.

Officers. Delaware's chief officers, serving in 1939, were: Governor, Richard C. McMullen (Dem.); Lieutenant-Governor, Edward W. Cooch; Secretary of State, Josiah Marvel, Jr.; Attorney-General, James R. Morford; Treasurer, Fagan H. Simonton; Auditor, Benjamin I. Shaw; Superintendent of Public Instruction, Dr. H. V. Holloway.

DELAWARE, UNIVERSITY OF. An institution of higher learning in Newark, Del., founded as an Academy in 1743 and granted a degree-conferring charter in 1833. It contains two co-ordinate colleges—one for men and one for women. The enrollment in 1939 was 976, of whom 601 were men and 375 were women. The enrollment in the 1939 summer session was 454. The faculty numbered 140 members. Appropriations from the State and Federal governments, plus income from other sources, amounted to approximately \$748,800 and invested endowment funds to \$605,536. The library contained approximately 79,200 volumes. President, Walter Hulihan, Ph.D., D.C.L., LL.D.

DELAWARE RIVER AQUEDUCT. See AQUEDUCTS; WATERWORKS AND WATER PURIFICATION.

DELINQUENCY. See CHILDREN'S BUREAU; PRISONS, PAROLE, AND CRIME CONTROL; PSYCHOLOGY.

DEMOCRACY. Social and political change in many countries invited in 1939 renewed attention to the doctrine of democracy. In the United States several notable organizations carried the word democracy in their titles and were active in the role of champions of this way of government. The most ambitious of these was the Congress on Education for Democracy, which though merely a meeting of American and some other supporters of democracy, took steps toward forming a permanent organization to advance its purpose. This Congress met August 15-17 at Columbia University in New York City; it had

been brought about mainly by the efforts of Dean William F. Russell of Teachers' College and Winthrop W. Aldrich, chairman of the board of the Chase National Bank; among those who addressed it were Nicholas Murray Butler, Earl Baldwin (former British Premier), John M. Ciechanowski (former Polish Ambassador to the United States), and Lord Stamp, who though detained in England spoke by radio; Edouard Herriot, President of the French Chamber of Deputies, who had been invited, sent a message. The effect of the session was to unite the bulk of the 383 delegates, for the most part leaders in a diversity of American educational, religious, industrial, and occupational groups, in the view that the future of democracy depended on better-planned education in democracy's base and requirements. Dean Russell in a closing address stated a plan to continue the work of the congress by means of a permanent body that would keep contact with helping organizations, would provide material for teaching democracy, and would carry on research on behalf of such teaching. While no formal classification of the type of democracy to be supported was adopted by the congress, the speeches as a whole indicated prevailing intention to promote representative government, extensive rights and liberty for the individual, and reliance on the performance of enlightened individual duty to the public cause rather than on an extension of authority.

Distinct from the congress, the American Committee for Democracy and Intellectual Freedom worked in some respects in the same field. This body issued, April 23, a declaration against activities that it opposed; the signers numbered 2391, of whom many held directive posts in universities or in journalism. The declaration condemned "discrimination" in schools, on account of poverty, sex, race or religion; demanded for teachers "intellectual freedom" and training in their responsibilities; held necessary full moral "and material" aid to students; called for protection of liberty of speech, press, assembly, "and teaching." And laid down the requirement that schools, press, and radio "must present the facts" as to history, the present world, race, and culture. Prof. Franz Boas, chairman of this committee, sent out, July 16, a statement controverting alleged misuse of the "concepts of race and of Aryanism" in current textbooks, and particularly the presentation of these ideas in ways favorable to "demagogues like Coughlin and Moseley."

The American Youth Congress, an annual gathering of young people's organizations since 1934, met in New York City July 1; it was charged by some of its members with failing to conform with the principles of democracy. It rejected, July 2, this party's motion to amend its "creed" by the insertion of a pledge to oppose communism. Thereupon a number of the groups in the congress withdrew, charging that the congress was partial to communism and therefore was not in accord with its own creed's endorsement of American democracy. The congress then passed a resolution condemning dictatorships, "Communist, Fascist, Nazi, or any other type," but according freedom of discussion to all, Communists, Socialists, and Fascists included.

Outside of the United States one of the proceedings bearing on the doctrine of democracy was the International Congress of American Democracies, which met in Montevideo, Uruguay,

March 20. Despite its name, this was a gathering of representatives not of governments, but of popular occupational or class organizations, commonly leaning to the left; many of the attendance had been driven into exile by the governments of their home lands. The Peruvian government reportedly protested to Uruguay on permitting the gathering, on the ground that Peru would there be represented only by outlawed Apristas; pressure from another quarter also, to forbid the meeting, was supposed to have been exerted. Uruguay allowed the congress to meet but forbade attacks on governments. This curtailed the intended effort to "mobilize opinion against the threat of penetration by totalitarian ideologies." The exiles, moreover, were relatively few: the Uruguayans in the congress numbered more than 300; those from the nine other participating countries, 83; and of the latter, Chile, and the United States, both friendly with their respective delegates, supplied in the order named, 17 and 4. Communists, moreover, were not admitted, save for two from Chile, who came as members of that nation's Popular Front. The delegates from the United States were: Kathryn Lewis, daughter of John L. Lewis and representative of Labor's Non-Partisan League; Luigi Antonini, of the American Labor Party; Marina Lopez, of the Council for Pan-American Democracy; and Jack B. Fahy, of the United Student Peace Movement.

The congress ended on March 24 six days before its appointed close, by reason of the 45 Argentine delegates' withdrawal in protests against Uruguay's prohibiting broadcasts of the proceedings to Argentina, Brazil, and Peru. A succeeding congress was proposed, to meet in Washington in September, 1940. Resolutions were passed for the creation of an inter-American organization "of the masses" to fight Fascism; for democratic faith and solidarity; and a defining democracy. The circumstances surrounding the congress made information too scanty for casting any clear light on possible communistic tendencies in the proceedings.

Compare COMMUNISM; FASCISM; SOCIALISM.

Over 20 British youth organizations were represented at the Youth Conference on Democracy Today and Tomorrow, held in London early in February under the auspices of the Association for Education in Citizenship.

A plea for a federal union of 15 countries classed as democratic (*Union Now* by Clarence K. Streit) aroused widespread discussion during 1939 and was republished in several foreign languages.

DEMOCRACY AND INTELLECTUAL FREEDOM, AMERICAN COMMITTEE FOR. See DEMOCRACY.

DEMOCRATIC PARTY. The chairmanship of the Democratic National Committee remained in the possession of Postmaster-General James A. Farley throughout the year. Himself regarded as a possible candidate for President, Farley had gained the knowledge of the national political keyboard by six years of service in the chairmanship. He continued, however, in apparently thorough accord with President Roosevelt, while the President's avoidance of a declaration for or against a third term of office restricted the Democratic political activities in the Presidential field.

The Young Democratic Clubs of America held a convention in Pittsburgh, August 10-12, pro-

viding the most noteworthy action of the National Democratic organization in the course of the year. The convention received with enthusiasm a message from the President that he would not support as a candidate any conservative nominee for President that the Democratic convention might put up in 1940. The convention did not adopt any resolution in favor of the future candidacy of Mr. Roosevelt but it gave strong approval to his policies. Virginia's Young Democratic clubs, however, voted (August 26) disapproval of a third term for "any man."

Among the States the chief action in the Democratic party in favor of a Presidential aspirant was the Texan Legislature's endorsement, in March, of John N. Garner. In general, other Democratic possibilities postponed activity, awaiting a definite sign whether the President would or would not seek a third term.

The effort of the head of the Democratic party—the President—to drive out the dissidents from political life or from the party fold had failed in the elections of 1938; it was not actively resumed in 1939. None the less it was kept alive by a passage, in a message (April 19) to the Young Republican Clubs celebrating Jefferson's birthday, to the effect that conservative Democrats should conform or leave the party.

There appeared no activity in planning the way to meet the cost of the Democratic National campaign of 1940. The most conspicuous single source of money in 1936 had been the contributions from organizations dominated by John L. Lewis; according to the New York Times's summary (August 11) of such contributions recorded with the Clerk of the House, the United Mine Workers had contributed \$420,000 or more toward organizations campaigning for the New Deal and had lent \$50,000 to the Democratic National Committee.

DE MOLAY, ORDER OF. A nonsectarian secret organization for young men between the ages of 15 and 21, founded in 1919 by Frank S. Land in Kansas City, Mo., and named in honor of Jacques De Molay, the last military grand master of the Knights Templar. The members are pledged to the precepts of love of parents, reverence, patriotism, cleanness, courtesy, fidelity, and comradeship, and to the promotion of the public school system and good citizenship. The Order is governed by a Grand Council of Freemasons, while the Chapters are sponsored by Masonic Bodies or groups of Masons. However, it is not a junior Masonic fraternity, and more than 60 per cent of its members are from non-Masonic families. In November, 1939, the active membership numbered approximately 150,000. The organization has an alumni of more than 900,000 men. The official organ is *International De Molay Cordon* (monthly). Frank S. Land, the founder, is Secretary General; Franklin D. Roosevelt is Honorary Grand Master; Allan M. Wilson, Manchester, N. H., Grand Master; Robert D. Williams, New York, N. Y., Deputy Grand Master. Dr. Stratton D. Brooks is Executive Director of the Secretary General's staff. International headquarters are at 201 East Armour Boulevard, Kansas City, Mo.

DENISON UNIVERSITY. A coeducational Christian college of liberal arts in Granville, O., founded in 1831. The enrollment for the autumn of 1939 was 847. Faculty members numbered 65. The endowment for 1938-39 was \$3,158,785, and the income, \$340,619. The library

contained 130,000 volumes including government documents. A new dormitory for women was opened in September, 1939, and a new dormitory for men was under construction. Gifts to the amount of \$107,320 were received. President, Avery Albert Shaw, A.M., D.D., LL.D.

DENMARK. A kingdom of northwestern Europe, comprising the peninsula of Jutland and two main islands of Zealand and Funen, with about 200 smaller adjacent islands in the Baltic, the Faroe Islands (q.v.), and Greenland (q.v.). The King of Denmark is also King of Iceland (q.v.). Capital, Copenhagen (Köbenhavn). King, Christian X, who succeeded to the throne May 14, 1912.

Area and Population. Area, excluding outlying possessions, 16,576 square miles. Estimated population on June 30, 1939, 3,805,000 (1935 census, 3,706,349). Living births in 1938 numbered 68,476 (18.1 per 1000); deaths, 39,057 (10.3); marriages, 33,624 (8.9). Emigrants in 1937, 9500. Populations of the chief cities were (1935 census): Copenhagen, 843,168; Aarhus, 90,898; Odense, 76,116; Aalborg, 48,132.

National Defense. Military training is compulsory, some 6800 conscripts being called up annually. The army, approximating 14,000 men in normal times, has few modern armaments and only about 65 airplanes. The navy consists of 2 coast defense ironclads, 17 torpedo boats, 3 mine-sweepers, 8 submarines, and about 35 airplanes. Under construction in 1939 were 1 mine-layer, 2 submarines, and 3 mine-sweepers. See *History*.

Education and Religion. There is no illiteracy. The 4498 lower schools had 486,000 pupils on Jan. 1, 1937; secondary, professional, and vocational schools, 64,980; the two universities at Copenhagen and Aarhus, 5600. The 1921 census showed 3,221,843 Protestants, 22,137 Roman Catholics, 5947 Jews.

Production. About 35 per cent of the working population is engaged in agriculture and dairying and 33 per cent in industry. Commerce and fishing are the other principal occupations. The 1938 livestock census showed 2,845,000 swine, 3,183,000 cattle, 564,000 horses, and 27,600,000 hens. Production in 1938 was (in metric tons): Butter, 190,000; milk products, 18,200; margarine, 81,300; cheese, 29,000; pork (1937), 317,100; wheat, 460,900; barley, 1,359,400; rye, 283,600; oats, 1,144,200; potatoes, 1,432,700; beet sugar (1938-39), 171,000. The sea fisheries in 1938 yielded 86,000 metric tons valued at 40,000,000 crowns. The value of industrial production, which was 3,019,700,000 crowns in 1937, declined very slightly in 1938. The 1938 sales turnover of all co-operatives belonging to the Federation of Danish Co-operative Societies totaled 2,201,800,000 crowns.

Foreign Trade. Imports for consumption were 1,640,900,000 crowns in 1938 (1,673,800,000 in 1937); exports of Danish products, 1,550,600,000 (1,568,500,000). The United Kingdom in 1938 took 55.5 per cent of all Danish exports; Germany, 19.6 per cent. See **IMPORTS AND EXPORTS**.

Finance. Closed accounts for the fiscal year ended Mar. 31, 1939, showed receipts of 573,200,000 crowns and expenditures of 553,000,000 crowns in the ordinary budget. The 1939-40 ordinary estimates placed receipts at 535,400,000 crowns, expenditures at 531,200,000, and the surplus at 4,200,000 against actual surpluses of 20,-

200,000 in 1938-39 and 25,500,000 in 1937-38. The outbreak of war in Europe in 1939 caused extraordinary expenditures of about 100,000,000 crowns above the 1939-40 budget estimate. The public debt was 1,255,000,000 crowns on Mar. 31, 1938. The crown (krone) averaged \$0.2183 in 1938, and \$0.2035 in 1939.

Transportation. Denmark has about 3145 miles of railway line (1483 miles state owned); 32,197 miles of highways (1939); and airlines connecting Copenhagen with the chief European centers. Most of the air services were resumed after being temporarily interrupted by the outbreak of war in September, 1939. Danish Airlines carried 42,000 passengers in 1938 (21,000 in 1937). The Danish merchant marine on June 30, 1938, aggregated 1,129,900 gross tons. The earnings of Danish steamers and motorships in 1938 were 279,000,000 crowns (309,000,000 in 1937). The total goods turnover in Danish ports in 1938 was 17,800,000 tons (19,100,000 in 1937).

Government. The Constitution vests executive power in the King, who acts through a cabinet responsible to the Rigsdag (Parliament). Legislative power rests jointly in the King and the Rigsdag. The Rigsdag consists of two chambers, the Folketing (lower chamber) of 149 members elected for four years by proportional representation and the Landsting (upper chamber) of 76 members, of whom 19 are elected by the Landsting itself and the remainder indirectly by voters of over 35 years of age. The term of Landsting members is eight years. Premier in 1939, Th. A. M. Stauning (Social Democrat), heading a coalition government of the Social Democratic and Radical parties, reconstructed Nov. 4, 1935.

HISTORY

Political Developments. Between Jan. 1, 1939 and the outbreak of the European War on September 1, Denmark enjoyed a period of exceptional economic prosperity coupled with steady progress toward the solution of its internal problems. In accordance with the program set forth by Premier Stauning on Oct. 4, 1938, the government in 1939 undertook important revisions of the Constitution designed to democratize the governmental system by abolishing the conservative upper chamber (Landsting) in its existing form, placing more power in the hands of a reorganized lower chamber (Folketing), lowering the voting age, and introducing more frequent use of the referendum.

These reforms were first voted by both houses of the parliament (Rigsdag) that had been in office since 1935. They were then confirmed by the new Rigsdag elected Apr. 3, 1939, but were defeated by a very narrow margin in a popular referendum held May 23. With the approval of 45 per cent of the total electorate required to put them into effect, the amendments lacked only 12,002 of the 978,039 needed votes. The new parliament accordingly reconvened on May 31 under the old system, although the Landsting on May 10 had voted itself out of existence. The Stauning Government, which had retained control of parliament in the election of April 3, indicated that it would try again later to put its constitutional program into effect.

The standing of the parties in the new Folketing, with the former standing in parentheses, was: Social Democrats, 64 (68); Liberals, 30 (29); Conservatives, 26 (26); Radical Liberals, 14 (14); Agricultural (Free People's) party, 4

(5); Justice League, 3 (4); Danish National Socialists, 3 (0); Communists, 3 (2); Slesvig (German Nazi) party, 1 (1). In the Landsting the standings after the 1939 and 1936 elections were, respectively: Social Democrats, 35 (31); Liberals, 18 (22); Conservatives, 13 (15); Radical Liberals, 8 (7); Agricultural party, 1 (0). One member was elected to each chamber from the Faroe Islands. The Social Democratic-Radical coalition government thus retained control by a somewhat reduced minority, while the Communists and Danish Nazis both showed gains.

In the South Jutland district awarded to Denmark from Germany by plebiscite after the World War, all the Danish parties formed a united front to oppose the Slesvig (German Nazi) party. The Danes polled 82,522 votes there against 14,978 for the Germans. Several Nazi propagandists who entered North Slesvig from the Reich to promote the German minority's campaign were expelled by the Danish Ministry of Justice in March. The campaign was marked also by the statement of Fritz Clausen, leader of the Danish Nazis, that Denmark might meet the fate of Czecho-Slovakia unless the government changed its "bolshvist" policies.

Labor Legislation. The government proceeded also to extend the program of labor legislation put into effect in 1938 (see 1938 YEAR BOOK, p. 209-210). A law effective July 1, 1939, provided for annual holidays for all employees on the basis of one day for each month of work or service, or 12 consecutive working days within a year. Upon the outbreak of war, the employers and labor unions followed the practice of the critical depression years and agreed on November 13 to submit all their disputes to mediation. The contract, covering 350,000 workers, barred strikes and lockouts and provided for the regulation of wages in accordance with a price index.

War Conditions and Measures. The outbreak of the European war found Danish industrial production at the highest level in the country's history. The building trades were more active than for several years. Unemployment was lower than at any time since 1931. Exports of industrial and agricultural products were increasing satisfactorily, with prices at good levels. The crop outlook was good, and in many other respects the country was enjoying the most prosperous year in a decade.

The war changed this situation overnight. The prices of Denmark's products, its foreign trade, its foreign exchange holdings, and the activities of the fishing fleet were adversely affected, while prices of imported articles and commodities increased sharply. A long list of emergency measures were adopted by the government in an effort to conserve essential supplies and protect the economic system. They included monetary restrictions, gasoline and fuel conservation programs, rationing and the restriction of imports. Income and property taxes were sharply increased.

These developments soon were reflected in the growth of unemployment totals from 56,000 in August to 174,000 in December and the serious stagnation of economic activity. Early in October all slaughterings of livestock were stopped as a result of the German submarine and mine blockade of Great Britain. Danish agriculture was reported to have sustained a loss of about 2,000,000 crowns daily, until shipments to Britain were resumed. Toward the year end the rapid reduction in the numbers of cattle and poultry indicated a weak-

ening of the Danish agricultural economy. Almost the sole bright spot in the economic picture at the close of 1939 was the large increases in earnings registered by Danish shipping as a result of the war; the gross income for the year was estimated at 500,000,000 crowns against 278,000,000 in 1938. The Danish economic situation would have been considerably worse had it not been for relatively large emergency stocks of essential commodities acquired with part of a 25,000,000-crown national defense loan issued in April.

Foreign Relations. The Danish Government and people strove throughout 1939 to prevent being sucked into the vortex of the European conflict. Denmark was the only one of the Scandinavian states that accepted Chancellor Hitler's April offer of a non-aggression pact. Under the pact signed May 31 the Danish Government gave a formal pledge to remain neutral in any war involving the Reich, while Germany undertook not to resort to war or "any other kind of force" against Denmark. Moreover Berlin expressly acknowledged Denmark's right to engage in normal trade with all belligerents in the event of war.

Upon the outbreak of war, Denmark called up 30,000 men for emergency service in the army and navy, and on September 3 issued a formal declaration of neutrality. The neutrality proclamation voiced the hope that both sides would respect Denmark's borders. On the very next day the seaport town of Esbjerg, West Jutland, was bombed from the air, apparently by a British airman who mistook it for a German naval base. On September 18-19 the Premiers and Foreign Ministers of Denmark, Sweden, Norway, and Finland met in Copenhagen and discussed plans for maintaining their firm neutrality, mutually safeguarding their economic life, and maintaining trade relations with both Britain and Germany. They expressed willingness to undertake reconciliation of the belligerents. A similar meeting was held in Stockholm on October 18-19 by the Kings of Denmark, Norway, and Sweden, the President of Finland and the Foreign Ministers of the four states.

However Denmark, like the other small neutrals of northwestern Europe, was subjected to increasing pressure from Britain and Germany. In mid-September the British began to ration imports into Denmark. On October 1 a Danish freighter was torpedoed and sunk by a German submarine—the first of many such attacks on Danish merchant vessels. Eight vessels of 21,253 gross tons were lost up to Dec. 28, 1939. The devaluation of the British pound caused Danish farmers to sustain a loss on exports to Britain. This was made up by the Danish Government beginning in November. Negotiations for an extension of existing trade agreements with Britain and Germany were opened late in November, and commerce with the Oslo powers was expanded.

The position of Denmark from both a military and economic standpoint became steadily more precarious. The Danes were admittedly unprepared to resist attack from any of the great powers. A wave of indignation swept the kingdom when Finland was invaded by the Soviet Union on November 30. But the Danish Government proclaimed its neutrality in that conflict also, and Danish assistance to the Finns was restricted to private collections of funds and supplies and the enlistment of a few hundred Danish volunteers in the Finnish armies. When a Communist member of the Folketing arose to ask a routine

question of the Minister of Commerce on December 6, every member of that body except two other Communists and the Minister walked out of the building. On the same day the Foreign Ministers of Denmark, Norway, and Sweden met in Oslo to discuss their future course, but the Danish Government declined to depart from its neutral policy in any respect.

See BELGIUM, FINLAND, GERMANY, GREAT BRITAIN, and SWEDEN under *History*.

DENTAL ASSOCIATION, AMERICAN. A national association organized in 1859 and reorganized in 1913:

"To cultivate and promote the art and science of dentistry, and of its collateral branches; to conduct, direct, encourage, support, or provide for exhaustive dental and oral research; to elevate and sustain the professional character and education of dentists; to promote among them mutual improvement, social intercourse, and good will; to disseminate knowledge of dentistry and dental discoveries; to enlighten and direct public opinion in relation to oral hygiene, dental prophylaxis, and advanced scientific dental service, and in relation to the advantages and progress of enacting and enforcing proper, just, and uniform dental laws in the several States; and collectively to represent, have cognizance of, and to safeguard the common interests of the members of the dental profession; with express powers to acquire property for the purposes of the corporation by purchase, deed, gift, bequest, or otherwise, and to hold and administer the same, and to publish dental journals, reports, and treatises."

This object is accomplished by means of an annual meeting at which scientific papers are read and clinics are presented, by the publication of *The Journal of the American Dental Association*, and through the work of various bureaus and committees as follows: Bureau of Public Relations, Library Bureau, Bureau of Chemistry, Council on Dental Therapeutics, Committee on Dental Legislation, Committee on Dental Economics, and Research Commission. The membership, as of Nov. 22, 1939, was 45,300 dentists. The secretary, Dr. H. B. Pinney. Offices are at 212 East Superior St., Chicago, Ill.

DENTAL CARIES. See DENTISTRY.

DENTISTRY. Inquiry into the cause and methods of prevention of dental caries continued throughout 1939 at the same high level that characterized recent preceding years. Scientists and laymen will profit immensely by the compilation of the findings and conclusions of 195 investigators with respect to its cause and control.¹ (For references, see *Bibliography*.) The broad picture of the current situation is admirably presented in the closing pages of this report in the form of a general analysis which was prepared presumably by William J. Gies, secretary of the committee responsible for it.

Caries is still believed to be "a bacterial disease of the calcified dental tissues, producing typical lesions that originate in characteristic locations. The active etiological factor is acid, produced by bacteria on restricted areas often or long enough to enable the acid there to disintegrate the mineral structure."² "The vast and intricate complexity of the causes underlying caries . . . remain to be discovered."³ The formation of strong enough acid to dissolve enamel at these restricted areas within a few minutes after soluble carbohydrates are taken into the mouth and the acid lasts for not much longer than one-half to one hour.⁴ A

large group of observers based on recent work are in general agreement that "civilized ('unnatural') modes of life" and the related "substitutions of refined foods" for the various "natural ones in the native diets," and "the methods of preparation" (cooking, seasoning, canning, storage, etc.) account in general, "when applied to primitives," for the associated marked increase of caries.⁵ "Sugar is a very important causative factor in caries."⁶

In the past determination of caries activity and susceptibility has been based wholly on clinical and X-ray examination. There are grave objections to such methods, of these the most important concern time and reliability. Clinically active caries can be recognized only some months after its actual onset, it is also very difficult to identify inactive caries. At least two reliable laboratory tests have been devised for determining contemporary caries activity (susceptibility) and within the last year both of these have come into extensive use, especially in large clinics and in some individual practices. They are: 1. Quantitative estimations of the numbers of *L. acidophilus* in cultures grown from the patient's saliva on the surface of Kulp tomato-peptone-agar plates supply a direct correlation between the *L. acidophilus* bacteria and caries activity.⁷ 2. Solution of calcium from the enamel during four hour incubation of saliva-glucose-human enamel mixtures at body temperature.⁸ With these tests clinicians and investigators for the first time are now able to estimate caries activity accurately and promptly and almost quantitatively. It is believed that these or similar tests will become an essential part of the periodic examinations of all dental patients, especially those within the lower age levels.

Prevention is still largely limited to long recognized methods based on early recognition of decayed tooth surfaces and suitable treatment by fillings, plus improvement in the dietary program as far as it is compatible with good health in other respects. Many authorities stress the elimination of sugar and refined carbohydrates,^{9, 10} and others emphasize the importance of a high mineral and high vitamin content of the diet.^{11, 12} "There is no dissent from the conclusion that a balanced (adequate) diet, from early childhood (following normal prenatal nutrition), requiring vigorous mastication, favors development of superior jaws, well-formed arches, excellent dentition, physiological tooth-cleansing, and low incidence of caries."¹³ Further confirmation is found for the long existing belief that: "Primitive people, living a natural life free from the stress and strain of modern civilization, and eating foods produced locally, have much less caries than those living under modern conditions."^{14, 15, 16} There is still general agreement that the problem of prevention is at best only partly solved and that satisfactory solution will be delayed till the cause of caries is fully known. Because recent studies have shown that the acid is formed soon after fermentable food is taken into the mouth, the possibility of inhibiting acid formation by the use of mouth washes and dentifrices immediately after eating is being investigated,¹⁷ even including preparations containing fluorine.^{18, 19}

Numerous papers have appeared within the year bearing on the bacteriology, chemistry, and physiology of saliva.^{20, 21, 22} Most of these are either directly or indirectly concerned with caries research. They also throw some light on this body fluid about which so little is known. It

seems quite clear that its composition and general characteristics are quite constant and very difficult to change.

On the basis of methods perfected previously by Schour and his associates for the determination at the rate of formation of enamel, dentin, and cementum as well as bone through the injections of alizarine and fluorine valuable information has been added to the mechanism of tooth development and tooth behavior in disease. "Enamel and dentin of all species studied show a common basic incremental calcification rhythm, which recurs at intervals of 16 microns."²³ Such methods of study have been applied to deciduous tooth hypoplasia. Tooth ring analysis supplies a better understanding of the hypoplastic defects in human teeth, caused by the arrest of enamel (and dentin) formation both at birth and during the period of adjustment after birth (neonatal period). This situation covers most instances of hypoplasia of deciduous teeth as prenatal hypoplasia is extremely rare.²⁴ The statement implies that the part of the tooth which is formed before birth is not damaged, generally speaking, and that prenatal tooth development is not greatly influenced by the mineral metabolism of the mother.

Current orthodontic literature discloses a rising interest in the relationship of heredity to mouth defects and malocclusion. This is not limited to this field as similar interest is shown with reference to dental caries and opalescent dentin.^{25, 26}

Clinical dentistry has been greatly benefited by the research in dental materials carried on at the U.S. Bureau of Standards and in various research laboratories. The current year, however, has seen no great change in clinical methods or practice.

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EDWARD H. HATTON.

DENVER, UNIVERSITY OF. A coeducational institution of higher learning in Denver, Colo., founded in 1864. The registration for the autumn quarter of 1939 totaled 3297, while the enrollment

in the 1939 summer session was 1513. The faculty has 311 members. The assets consisted of endowment assets of \$2,631,645 and plant assets of \$1,731,374. The income for the year 1938-39 was \$838,118. The library contained 146,028 volumes. Chancellor, David Shaw Duncan, Ph.D., LL.D.

DEPARTMENT STORE SALES. See BUSINESS REVIEW; MARKETING.

DEPAUW UNIVERSITY. A coeducational institution for higher learning in Greencastle, Ind., under the auspices of the Methodist Church, founded in 1837. The enrollment for the autumn session of 1939 was 1466, including 800 men and 666 women. The faculty numbered 105. The productive funds amounted to \$5,804,244, while the total gross operating income for the year 1938-39 was \$529,189. The library contained 91,024 volumes. John H. Harrison Hall, a building which will house the Departments of Geology, Botany, Zoology, and Psychology, is in the process of construction at a cost of \$350,000. The University received during 1939 a bequest of \$400,000.

DEPORTATIONS. See IMMIGRATION AND EMIGRATION; SUPREME COURT; BRIDGES CASE.

DEPOSITS. See BANKS AND BANKING.

DETERDING, dā'tēr-dīng, SIR HENRI WILHELM AUGUST. A Dutch industrialist, died at St. Moritz, Switzerland, Feb. 4, 1939. Born in Amsterdam, Apr. 19, 1865, he was educated at the Hoogere Burgerschool there, and at the age of 16 went to work for the Twentsche Bank. He remained there for six years when he went to work for the Netherlands Trading Society, being sent to the Netherlands East Indies. In 1896 he joined the Royal Dutch Oil Co., a small organization. Through his efforts, facilities for the delivery of oil were speeded up and huge storage tanks built in various cities. In 1900 he was appointed managing director and in 1902, director general.

In 1903, Deterding was responsible for the merger of the Royal Dutch Co., the British Shell Co., and Russian oil fields controlled by the Paris Rothschilds, into the Asiatic Petroleum Co., in which the sales of the organizations were pooled. In 1907 to further production they formed the Batavian Petroleum Co., and to unify the transport, storage, and distribution of oil, they formed the Anglo-Saxon Petroleum Co. Rate wars with the Standard Oil Co. were carried on during 1903 and 1910, and again in 1927 and 1930.

Shortly after the beginning of the century, the Royal Dutch entered the American market and made a survey of Oklahoma oil fields in 1908. In 1912 the s'Gravenhage Association, Ltd., was formed. It bought up several small oil companies in the United States and formed the Roxana Co. Subsequently Shell Union was formed comprising the United States interests, and in 1913, The California Oilfields, Ltd., was bought. In 1918, the Royal Dutch Co. developed Mexican properties. Subsequently, they entered the industry in Egypt, the Near East, and the Argentine.

After the Russian Revolution, Sir Henri, who was given an honorary K.B.E. by the British Government in 1920, claimed the oil fields formerly controlled by the Rothschilds, and which his organization had acquired in 1903, but the Soviet Government refused to consider his ownership. A hater of Communism thereafter, he was an early supporter of Adolph Hitler in Germany, and in 1930, the Soviet Government charged him with being the ringleader of a plot to overthrow the Stalin regime.

In 1937, Sir Henri retired as director general,

although remaining as a director. He also retained a directorship in the Shell Transport and Trading Co., Ltd. In 1934 he published *An International Oilman*.

DETROIT. See MICHIGAN.

DETROIT, UNIVERSITY OF. An institution of higher education in Detroit, Mich., under the auspices of the Roman Catholic Church and conducted by the Jesuit Fathers, founded in 1877. In the autumn of 1939 there were 3166 students registered. The summer school registration was 558. The faculty numbered 201. The endowment amounted to \$1,571,927, while the income in 1938-39 was \$761,426. There were 102,170 volumes in the library. President, the Rev. Charles H. Cloud, S.J., inducted July 9, 1939.

DEWEY, JOHN. See PHILOSOPHY.

DEWEY, THOMAS E. See NEW YORK CITY; REPUBLICAN PARTY.

DIES COMMITTEE. The House of Representatives' committee for the investigation of un-American activities, for brevity the Dies Committee (so-called after its chairman, Representative Martin Dies of Texas), had met with difficulty in its inquiries in 1938 and had asked urgently for the co-operation of the Federal administrative departments. Its existence renewed, the committee began early in August, 1939, a period of full activity that continued into December. During this period the committee no longer sought to rely on administrative co-operation but carried out its inquiry independently. Its discoveries as to the German-American Bund lent significance to the prosecution of Fritz Kuhn, the Bund's leader, in New York City; Earl Browder, who had run for President on the Communist ticket in 1936, admitted to the committee that he had used a false passport in traveling to Europe, and he was thereafter indicted on a Federal charge for this alleged offense. Testimony heard by the committee indicated receipts of heavy sums by the Russian Communist authorities, from sources in the United States, and the Soviet government's payments of money to support agencies working its purposes in the States. It was represented that some Communists had served as spies, collecting military information and secrets of manufacturers. The American Youth Congress, according to one of the committee's informants, was dominated by certain members connected with the Communist party. The American League for Peace and Democracy was in like manner represented as created by Communists in 1935, and the committee issued a list of 563 names of Federal employees purportedly members of this league. Other testimony averred that Communists had strongly influenced the C.I.O., its affiliate the National Maritime Union, and a part of the American Federation of Teachers. Some associations of consumers, such as the Consumers' League, were stated by testimony to be influenced, as to their direction, by agents of the same doctrine.

In the majority of important cases the publication of testimony as to subversive activity in a going organization, Federal or other, drew sharp denials or reproaches from the people directing the organization. In the case of the publication of the 563 names of Federal employees listed as belonging to the American League for Peace and Democracy President Roosevelt, usually non-committal on the proceedings of the Dies Committee, spoke (October 27) of the publication of these names as a "sordid procedure," and the

chairman of the Washington branch of the League charged that the committee had been guilty of a violation of civil liberties.

Hearings on German-American Bund. Fritz Kuhn and others connected with the German-American Bund were questioned in the course of August, September, and October. Kuhn, as a witness, denied that the Bund was an agency of the German Nazi government. He gave the lie to a suggestion that the Bund sought to set up in the United States a government like Germany's. The Bund's members, he admitted, were sworn to defend Germany's good name. Members paying dues, as he estimated, numbered 20,000. A former German Social Democrat, Gerhard H. Seger, testified that Kuhn had been connected with Hitler; in support of this he offered articles published in the *Weckruf*, a German weekly in New York, conducted by Seger. A former Bundist Neil H. Ness, in like vein, told the committee that the Bund's unit in Los Angeles had worked out plans to destroy docks, waterworks, and other essential structures in the Pacific States if ever war should break out between the United States and Germany. A 19-year-old German-born girl, Helen Vooros, related a trip that she had made to Germany in 1938, as a leader in the Youth Movement at the South Brooklyn branch of the Bund, to receive six weeks of training provided for young Nazi workers. Witnesses thus impairing Kuhn's denial of the Bund's serving the Nazi government as an agency raised a serious point as to Kuhn; the committee brought this point out by suggesting to the Department of Justice (October 23) the propriety of proceedings for violating the alien agents registration law.

The committee's investigation of the Bund had nothing directly to do with the concurrent criminal proceedings against Kuhn on the part of authorities in New York City (q.v.).

Communists' Agencies and Activities. Earl Browder, the most prominent of active Communists in the United States, admitted to the Committee (September 5), in the course of testimony, that he had traveled in foreign countries in the previous two years by use of a passport bearing a false name; what name this was, he would not say. Others of his party, he said, had followed the same practice, finding it convenient in passing through countries where Communists were unpopular. Obtaining a passport by use of a false statement was a punishable Federal offense. The Department of Justice, invited by members of the Committee to prosecute Browder, took no immediate action. On October 23 Chairman Dies stated that unless further delay were "necessitated by strong reasons" he would try to have the indictment brought directly by the local District Attorney in New York. The Department of Justice immediately obtained the indictment against Browder, who was arrested on the same day. Released on bail, he awaited trial through the rest of the year.

Among other testimony on alleged Communist action, that of Fred E. Beal, organizer of the textile strike at Gastonia, N. C., in 1929 (see *YEAR BOOK*, 1929, p. 612), and thereafter a prisoner in that State, asserted that he had been sent to North Carolina by William Z. Foster, Communist leader, to organize workers. Beal charged that the International Labor Defense, in defending him of complicity in the murder of Police Chief Aderholt—an incident of the strike

—had hampered his case by bringing in Communist propaganda. An account of the Russian Communist organization's alleged extraction of possibly \$3,000,000 a year from manufacturers in the United States came from Dr. David H. Dubrowsky, an adherent of Russian communism prior to Stalin's supremacy; by far the most of this total was attributed to a charge for advertising, imposed at rates enforced through the Amtorg Corporation, for advertising in Russia the goods that the corporation bought for that country.

The Dies Committee had exerted itself in 1938 to hasten the proceedings of the Department of Labor, for the deportation of the alleged Communist Harry B. Bridges; for the outcome of these proceedings in 1939, see *BRIDGES CASE*.

DIESEL ENGINES. See *ELECTRICAL TRANSPORTATION*; *ENGINES*; *RAILWAYS*.

DISASTERS. The major disasters of the year are listed under *CHRONOLOGY*. See also *ACCIDENTS*; *EARTHQUAKES*; *FIRE PROTECTION*; *FLOODS*; *RAILWAYS*; *RED CROSS*; *SHIPPING*. The sinking of the *Squalus* is described in a separate topic entitled *SQUALUS DISASTER*. For shipping disasters incident to the war, see *EUROPEAN WAR* under *The War at Sea*.

DISCIPLES OF CHRIST. A communion known also as the Churches of Christ and sprung from a movement for Christian unity, which arose in American Presbyterian circles at the beginning of the 19th century, under Barton W. Stone, in Kentucky, and Thomas and Alexander Campbell, in Western Pennsylvania. This is the largest religious body having its origin in America. The foreign missionary work in 1939 embraced the Belgian Congo, Africa, China, India, Jamaica, Japan, Mexico, Philippine Islands, Puerto Rico, Argentina, Paraguay, and Tibet (Batang, on the border).

Among the periodicals published by the communion are *World Call*, *Christian Evangelist*, *Christian Standard*, and *Christian Unity Quarterly*. The president of the International Convention for the year was Dr. Roger T. Nooe, Nashville, Tennessee. For statistics, see *RELIGIOUS ORGANIZATIONS*.

DISEASES. See *DENTISTRY*; *MEDICINE AND SURGERY*; *VITAL STATISTICS*.

DISTRICT OF COLUMBIA. An area, coterminous with the city of Washington; it is an administrative district under the special laws enacted by the U.S. Congress for its government. It owes its status to Washington's being the National capital, where as contemplated in the Constitution the Federal Government should have the sole jurisdiction. The city of Washington no longer has a political status apart from that of the District, and for political and administrative purposes the District covers the city. Area (1930), 70 square miles, inclusive of 8 square miles of water. Population, census of 1930, 486,869; latest Federal estimate (1937), 627,000.

The District does not choose its governing officers by local election. A Board of Commissioners composed of three Federal appointees, directs the local government. The Commissioners (October, 1939) were Melvin C. Hazen, President of the Board; George E. Allen; and Col. David McCoach, U.S.A., Engineer Commissioner.

Manufacturing. The slight extent of the manufacturing industries, as reported in 1939, indicated the degree to which the city of Washington, largely inhabited by people gaining their living

by work for the Federal Government, did without the material and economic production helpful to the sustenance of most other communities. There were in the District of Columbia in 1937, 469 manufacturing establishments (in 1935, 490); their wage-earners numbered 8714 (in 1935, 8115); they came to 1.4 per cent of the 627,000 estimated to constitute the population in 1937; their wages totaled \$12,848,273 (for 1935, \$11,952,965). They produced goods to the total of \$74,107,967 (in 1935, \$66,231,965), to which they contributed by the processes of manufacture \$42,656,805 (in 1935, \$37,348,118). About one-third of the total of goods produced by the manufacturing factories consisted of \$25,207,998 in newspapers and periodicals—largely or mainly the Washington dailies. Bread and the like, ice-cream, confectionery and other articles of the inhabitants' fare made up much of the rest. Federal operations of a quasi-manufacturing character, such as printing, and the making of money, the production of maps, charts, and diagrams did not appear, as such, in the figures of the Census of Manufactures. They occupied a considerable number of persons, the Government Printing Office, for instance, being a great printing house handling many extensive publications.

Events. The British King George VI and Queen Elizabeth came to Washington for two days (June 8-9), were guests of President and Mrs. Roosevelt, and spent the night of June 7 in the White House. The visit was the first that a reigning British monarch had made to the Federal Capital; it formed the chief event of the tour of friendship that the King and Queen made in the United States in June. The Royal party entered Washington at 11 a.m., June 8; were met by the President and Mrs. Roosevelt in the Presidential reception room at the Station; were saluted in the Plaza by the "21 guns," fired by four three-inch pieces, and by the Marine Band, playing "God Save the King" and "The Star-spangled Banner"; drove past great throngs, to the White House; there, at noon, received members of the diplomatic corps, who were presented to them; made a sightseeing trip, 2:30 p.m., through the city; attended, 5 p.m., a garden party at the British Embassy, to which 1400 had been invited; were the guests of honor, 8 p.m., at a formal dinner of 81 places, at which the President gave a toast to the good relations between Britain and the United States and the King responded. On June 9, the King and Queen were received, 11 a.m., in the rotunda of the Capitol, by the members of the Senate and of the House; joined the President and Mrs. Roosevelt; 12 m., on the yacht *Potomac*; landed, 1:30 p.m. at Mount Vernon, where the King laid a wreath on the Tomb of Washington; went by highway to Arlington, where, 4:35 p.m., the King placed wreaths on the Tomb of the Unknown Soldier and on the Canadian Cross; gave a dinner, 7:45 p.m., at the British Embassy, in honor of the President and Mrs. Roosevelt; and departed by train for New York, 11:30 p.m. Except for unseasonably hot weather on the 8th (94 deg., maximum) the visit was made under ideal conditions.

Congress revised the District's system of revenue, to increase the total as the recent increase of the population might well require; it passed the District of Columbia Tax Act, imposing on persons domiciled in the District an income tax ranging from 1 to 3 per cent of taxable income and at 5 per cent on that of corporations,

authorized yearly Federal appropriation of \$6,000,000 for the District, and repealed existing taxes on intangible personal property and on business privileges, imposing at the same time a personal-property tax on automobiles. A movement was under way in the spring to bring about the purchase, by the Government, of the historic Decatur House, then in the hands of an estate. See AERONAUTICS.

DIU. See PORTUGUESE INDIA.

DIVING BELL. See SQUALUS DISASTER.

DIVORCE. See LAW.

DJEBEL DRUSE. See SYRIA AND LEBANON.

DODECANESE ISLANDS. See ÆGEAN ISLANDS, ITALIAN.

DOGS. See SPORTS.

DOHERTY, HENRY LATHAM. An American industrialist, died in Philadelphia, Dec. 26, 1939. Born in Columbus, Ohio, May 15, 1870, he received a public school education and in 1882 entered the employ of the Columbus Gas Co., as an office boy. He remained with this company until 1890 and from then until 1905 he was an engineer, or manager of gas, electric, or traction companies in 29 cities in the Middle West. In 1905 he came to New York where he organized Henry L. Doherty & Co., bankers and operators of public utility corporations. In connection with this company he also organized The Doherty Operating Co., and The Doherty Securities Co. In 1910 he organized and became the president of Cities Service Co., a holding company for more than 190 public utility and petroleum properties, with combined assets of \$1,288,104,833 in 1932. In 1939 Mr. Doherty was listed as president of 54 companies and director of 58.

One of the leaders in the oil industry, Mr. Doherty for many years waged a vigorous fight to arouse the oil industry to conserve oil and eliminate waste and for the government regulation of the production of oil. He also urged the adoption of a program of oil conservation known as "unit operation" of each new pool. His efforts in this latter regard were crowned in 1927 when the American Petroleum Institute, of which he was one of the founders, adopted his program. A disagreement with the ideas of the oil industry in carrying out his program led to his resignation from the Institute in 1931. Although he continued his fight for conservation and control of the industry, the New Deal reforms advocated by the Government he considered too sweeping.

One of the largest real estate holders in the country, Mr. Doherty owned among other parcels of real estate the office buildings at 60 Wall Street (completed in 1932) and at 24 State Street, New York City, at the latter of which he at one time maintained his home. He was a believer in the future of Florida as a resort and after the market crash of 1929 he acquired a chain of palatial hotels there, including the Miami-Biltmore, control of which passed to an associate in 1938.

Mr. Doherty had about 150 patents to his credit and in 1898 was awarded the first Beall Gold Medal by the American Gas Light Association for a paper on "Gas for Fuel." In 1930 he received the Walton Clark medal of the Franklin Institute "in consideration of his outstanding and valuable work in development of the manufactured gas industry," and in 1937 he was awarded the Anthony F. Lucas gold medal for "distinguished achievement in improving the prac-

tice of finding and producing petroleum" by the American Institute of Mining and Metallurgical Engineers. He was a member of the American Association for the Advancement of Science and served as president of a number of Associations connected with the lighting industries. Lehigh University gave him the honorary degrees of D.Eng. (1931) and LL.D. (1937) and Temple University the honorary LL.D. (1937), and in 1938 elected him the board of trustees of the University. From 1934 to 1937 he served as national chairman of the President's Birthday Ball, which sponsors a series of dances throughout the country on January 30, the birthday of President Roosevelt, for the benefit of infantile paralysis sufferers.

DOMESTIC RELATIONS. See LAW under *Private Law*.

DOMESTIC TRANSPORT. See AERONAUTICS.

DOMINICA, dŏm'i-nē'ka or dŏ-mīn'i-ka. A British island colony in the West Indies. Area, 305 square miles; population, 41,000. Capital, Roseau (6803 inhabitants). Chief products are timber, coffee, and tropical fruits. On Jan. 1, 1940, Dominica became officially a separate colony within the Windward Islands group, having been previously (since 1833) under the jurisdiction of the governor of the Leeward Islands.

DOMINICAN REPUBLIC. A West Indian republic, occupying the eastern two-thirds of the island of Hispaniola (Haiti). The name of the capital was changed from Santo Domingo to Ciudad Trujillo, Jan. 9, 1936.

Area and Population. Area, 19,332 square miles; population, estimated on Dec. 31, 1937, at 1,581,248. About 40 per cent of the inhabitants are white (mainly of Spanish descent), 40 per cent mixed, and 20 per cent Negro. Foreigners at the 1935 census included 52,657 Haitians, 9272 British subjects (mostly West Indians), 3221 Puerto Ricans, 1572 Spaniards, and 1467 United States citizens. Populations of the chief cities (1935): Ciudad Trujillo, 71,297; Santiago de los Caballeros, 33,919; San Pedro de Macoris, 18,889; Puerto Plata, 11,777. Language, Spanish.

Defense. Defense forces include an army of about 300 officers and 3000 men; an aviation corps; 1 armed transport, 1 gunboat, and 4 armed coastal patrol ships. The national constabulary was organized as an auxiliary arm of the army in 1936. Defense budget for 1939, \$1,879,000.

Education and Religion. About 20 per cent of the adult Dominicans were literate in 1935. In 1939 there were 947 primary schools, with slightly over 103,000 pupils, 6 secondary schools with 1550 students, 12 vocational schools with 3300 students, 3 normal schools with 2000 students, and the University of Santo Domingo (founded 1558), with 350 students. About 97 per cent of the Dominicans are Roman Catholics.

Production. Agriculture supports about 80 per cent of the population. Raw sugar accounted for 59 per cent of the value of all exports in 1937 and 1938. Sugar production for the season ended Sept. 1, 1939, was 431,705 metric tons. The 1938 shipments of the three other chief exports were (in metric tons): Cacao, 28,366; coffee, 8394; molasses, 109,196. Corn, citrus fruits, rice, bananas, starch and tapioca, potatoes, beans, onions, peanuts, and pineapples are other crops. Livestock in 1935: 913,128 cattle, 879,991 swine, 373,204 goats, 265,881 horses, 137,678 asses, 44,528 mules, and 34,829 sheep. Forests yield ma-

hogany, espinillo, lignum-vitae, cedar, and other cabinet and dye woods. Gold production in 1938, 199 kilograms. Sugar refining accounts for 91.8 per cent of the persons employed in industrial enterprises.

Foreign Trade. Imports in 1938 totaled \$11,342,000 (\$11,692,000 in 1937); exports, \$14,347,000 (\$18,120,000). The United States supplied 54 per cent of the 1938 imports, Japan 11, Germany 8, and the British West Indies 5 per cent. Of the exports, the United Kingdom took 42 per cent, United States 32, France 8. Values of the chief exports in 1938 were: Raw sugar, \$8,582,062; cacao, \$1,915,324; coffee, \$1,039,309; molasses, \$615,842.

Finance. The budget for 1939 placed revenues at 11,595,000 pesos (11,694,000 in 1938); expenditures, 11,483,000 pesos (11,682,000 in 1938). In 1937 actual receipts were 11,562,000 and expenditures 11,390,000 pesos. Foreign debt on Dec. 31, 1938, \$15,604,000; internal floating debt on Dec. 31, 1937, estimated at not less than 2,600,000 pesos (peso equals one U.S. dollar). In addition the Dominican Government on Jan. 31, 1938, agreed to pay the Haitian Government \$750,000 for damages suffered by Haitian nationals on Dominican territory in 1937. Of this sum \$250,000 was paid on Feb. 28, 1938 and \$100,000 was due on January 31 of each succeeding year for five years.

Transportation. In 1939 there were two railways with 147 miles of line; 3925 miles of highways; a regular station of Pan American Airways at San Pedro de Macoris; a deep-water port at Trujillo City and ports accessible to smaller vessels at Azua, Barahona, Frontier, La Romana, Monte Cristi, Samaná, and Sánchez. The British-owned Samaná-Santiago railway was purchased by the government for \$50,000 in 1939, making both railways state property.

Government. The Constitution of June 20, 1929, revised as of June 9, 1934, vests executive power in a President elected for four years by direct vote. There is a Congress of 13 Senators and 35 Deputies, elected for four years by direct suffrage of literate males. However Gen. Rafael Leonidas Trujillo Molina's Dominican party is the only political organization permitted. Trujillo was President of the republic from Aug. 16, 1930, to Aug. 16, 1938, when he was succeeded by his own candidate, Dr. Jacinto B. Peynado, elected May 16, 1938 (see 1938 YEAR BOOK, p. 213).

HISTORY

Trujillo's Dictatorship. Although he had turned over nominal leadership to President Peynado in 1938, ex-President Trujillo retained firm control over the government and country throughout 1939. Legislation was passed establishing a social welfare system and providing subsidies for the newly organized Dominican steamship line which initiated a West Indian service with a converted naval vessel on Dec. 10, 1938. To finance these measures and offset declining budget revenues, a sales tax was imposed on domestic and imported rice and the registration fee on certain imported medicines and pharmaceutical specialties was tripled. The government also placed in effect the law signed Dec. 21, 1938, providing that 70 per cent of the employees of all commercial, industrial or agricultural enterprises must be Dominican citizens and that they should receive 70 per cent of the total payroll. It was announced at the dedication of the Dominican



Courtesy, Katharine Cornell and The Playwrights' Company—Photograph by Van Damm

Katharine Cornell and Francis Lederer in a scene from
 "NO TIME FOR COMEDY"



Courtesy, The Theatre Guild in association with Eddie Dowling—Photograph by Van Damm

Julie Haydon, Edward Andrews, and Eddie Dowling in
 "THE TIME OF YOUR LIFE"

DRAMA



Courtesy of The Playwrights' Company—Photography by Van Damm
 Paul Muni as King McCloud in
 "KEY LARGO"



Courtesy of Maurice Evans Productions, Inc.—Photograph by Van Damm
 Maurice Evans as Falstaff in
 "HENRY IV"

Pavilion at the New York World's Fair on May 20 that the Dominican Government would award annually a Trujillo Peace Prize of \$50,000 to the individual or organization making the most outstanding contribution to peace.

On June 29 Trujillo in a message to the nation announced that he was going abroad but that if his regime was interrupted in any way during his absence he would return immediately to deal with the situation. He arrived in Washington via Miami on July 6, was received with diplomatic honors despite criticism of the visit addressed to President Roosevelt by the Committee for Dominican Democracy, and proceeded to New York and the World's Fair, where further official courtesies were tendered. General Trujillo then went to France, arriving August 7. On August 24 the Dominican Legation in Paris announced that he had been named special ambassador in France and would present his credentials in September. Upon the outbreak of the European war, however, Trujillo returned to the United States and then proceeded to the Dominican Republic late in October. It was learned on October 1 that Gen. Ramón Vazquez Rivera, former Chief of Staff of the army, had been imprisoned at Ciudad Trujillo on a charge of conspiring against the government. He had resigned as Dominican consul general at Bordeaux, France, in 1938.

Speculation in the prices of foodstuffs and other necessities led the government on September 13 to regulate the importation, exportation, sale, and distribution of specified products. A National Committee of Foodstuffs was established to fix maximum prices and prevent hoarding.

Foreign Relations. Dominican foreign policy during the year appeared somewhat equivocal. Early in 1939 the government authorized the United States Navy to use Samaná Bay on the east coast of the island as a base for the winter maneuvers in Caribbean waters. About the same time the German Minister to Central America visited Ciudad Trujillo, ostensibly to negotiate a barter deal. Reports that the Dominican Republic was cultivating close relationships with Germany and planned to supply fuel oil to German submarines operating in Caribbean waters in wartime were denied by the Dominican Minister to the United States on March 22. A few days later the Dominican Foreign Office announced that it would not recognize the Franco regime in Spain unless the United States did so, acting "in accordance with the declarations . . . of General Trujillo to the effect that Dominican foreign policy regarding extra-continental issues would be guided by and in harmony with the foreign policy of the United States."

Upon his return to the United States in September, Trujillo declared that the United States must take the lead in unifying the Americas and that the Dominican Republic would follow Washington's lead. A few days later he declared that his efforts over a nine-year period to end the United States customs receivership in the Dominican Republic had "failed in the face of an imperialistic attitude." He said he had exchanged letters with President Roosevelt regarding the matter in July but that no agreement was reached. In the same interview, Trujillo criticized the South American republics for failing to support his proposal for an American League of Nations or to contribute funds toward the Columbus Memorial Lighthouse project at Ciudad Trujillo.

During October the San Juan, P.R., corre-

spondent of the *New York Times* wrote that French cruisers from Martinique were scouring Dominican waters following repeated reports that German submarines were being secretly refueled there, and that a Dominican Coast Guard cutter had been sunk off Cape Frances Viejo in a collision with a French warship. These reports were vigorously denied by Dominican officials. Shortly afterward Dominican newspapers reported that the Dominican steamer *Hispaniola* was held by the French authorities at Martinique on unannounced charges. Retirement of William E. Pulliam as General Receiver of Dominican Customs was announced by the State Department at Washington in December.

After failing to pay the \$100,000 due Haiti in January, 1939, under the Dominican-Haitian treaty of Jan. 31, 1938 (see 1938 YEAR BOOK, p. 213), the Dominican Government on February 17 paid the Haitian Government \$275,000 in a lump-sum settlement of the outstanding indebtedness. This was followed in March by an unexpected two-hour interview between ex-President Trujillo and President Stenio Vincent of Haiti at Cercadillo on the Dominican side of their mutual frontier. In October Trujillo permitted Col. Demosthenes P. Calixte, former commandant of the Garde d'Haiti, and other prominent Haitian political exiles, to transfer their headquarters from New York to Ciudad Trujillo. In Haitian circles this was viewed as evidence of an unfriendly attitude on the part of the Dominican dictator toward the Vincent Government.

Refugee Settlement. General Trujillo announced at Washington on October 25 before returning home that refugee families to the number of 500 would be admitted to the Dominican Republic without payment of the usual \$500 immigration fee. He stated that his government would welcome the refugees "with humanitarian feeling" and that he would personally be responsible for the upkeep and education, for a period of two years, of a number of young people who will come with those families."

DONATIONS AND BEQUESTS. See **BENEFACTIONS.**

DOUGLAS, WILLIAM O. See **SUPREME COURT.**

DOUHET THEORY. See **MILITARY PROGRESS.**

DRAINAGE. See **SOILS.**

DRAMA. The year opened auspiciously in New York with January notable for the great preponderance of its genuine successes and otherwise creditable mid-season novelties over the casualties. First on the calendar was *Mamba's Daughters*, a dramatization of Dorothy and DuBose Heyward's tragic novel of life among the Charleston, South Carolina, Negroes, in which Ethel Waters, previously best known as a picturesque colored entertainer and singer in revues, disclosed unsuspected powers as an actress and was competently supported, under the direction of Guthrie McClintic, by several other players of her own race and by Jose Ferrer on the white side. Then came *The Primrose Path*, by Robert Buckner and Walter Hart, a George Abbott offering popularized, be it hoped, at least as much by virtue of laughable characterizations as by its deplorably low moral tone. For this occasion Helen Westley temporarily forsook the screen to enact a role after her own heart. Then a Group Theatre production, Irwin Shaw's *The Gentle People*, an odd sort of crook play with

the usually ingratiating Franchot Tone, another prodigal returned from Hollywood, portraying a gangster who meets a well-deserved violent fate. Sam Jaffe, Roman Bohnen, Sylvia Sidney, and Elia Kazan were other members or guests of the Group involved. And besides these three the very first week of 1939 inaugurated also a visit from the ever-welcome D'Oyly Carte Opera Company in their familiar repertory of Gilbert and Sullivan items. Next followed the American presentation of a London hit, *Dear Octopus*, by Dodie Smith, an extraordinarily charming and heart-warming comedy of English family life acted nothing short of exquisitely by Lucile Watson, Rose Hobart, Alice Belmore Cliffe, and a child named Helen Renee, and very delightfully by Reginald Mason, Jack Hawkins, Margaret Dale, Lillian Gish, and various other members of the well-selected cast. But for some inexplicable reason the run of *Dear Octopus* was briefer than that of any other January arrival here recorded, even of one of the semi-occasional revivals of so stereotyped a work as Oscar Wilde's farce-comedy, *The Importance of Being Earnest*, done by a fairly imposing company that included Clifton Webb, Estelle Winwood, Derek Williams, Helen Trenholme, Hope Williams, and Florence McGee.

Set to Music, a revue composed and staged by Noel Coward, with Beatrice Lillie as its bright particular star and Richard Haydn as a lesser feature, though moderately successful, was hardly up to the Coward standard. But an elaborately spectacular drama by George S. Kaufman and Moss Hart, *The American Way*, with incidental music by Oscar Levant, portraying episodically the career and adaptability of a most desirable type of German immigrant in the United States, served comfortably to fill the vast (Rockefeller) Center Theatre until summer. Its tremendous cast was headed by Fredric March, Florence Eldridge, McKay Morris, and Ruth Weston. The month ended with a notable production by Maurice Evans of Shakespeare's *King Henry IV* (*Part I*) in which he himself acted the role of Falstaff, Edmond O'Brien that of Prince Hal, Wesley Addy was the Hotspur, and Mady Christians the Lady Percy, scoring a total of 74 performances, something of a record for one of the less familiar Shakespearean dramas.

February too was sprinkled, though less plentifully, with occasions of some note in the theatre. An English version of Stefan Zweig's Biblical tragedy, *Jeremiah*, of the vintage of Great War days, was staged by the Theatre Guild with a huge cast headed by Arthur Byron as King Zedekiah and Kent Smith in the title role, but met with slight favor. Vastly better was the lot of *One for the Money*, an altogether charming, clever, and novel revue by Nancy Hamilton in which fresh and unfamiliar talent was presented against an uncommonly tasteful setting. Even greater, if less understandable, success attended a tawdry work purporting to disclose the private life of the Florodora sextette girls of long ago; title, *I Must Love Someone*. A musical comedy by J. P. McEvoy, *Stars in Your Eyes*, with lyrics by Dorothy Fields and airs by Arthur Schwartz, proved a popular medium for the arts of Ethel Merman and the antics of Jimmy Durante. And in Lillian Hellman's *The Little Foxes*, Tallulah Bankhead made much of an opportunity for effective character-acting by portraying a heartless, money-grubbing virago of almost murderous dis-

position, with excellent support, partly in kind, partly in contrast, from Patricia Collinge, Frank Conroy, Lee Baker, Charles Dingle, Carl Benton Reid, Florence Williams, and Dan Duryea. The run of this play survived the summer and lasted out the year.

March was distinguished by but two productions of real note—*Family Portrait*, by Lenore Coffee and William Joyce Cowen, a profoundly conjectural work on the possible reaction of the members of the household of Jesus of Nazareth to His life, career, death, and memory, beautifully and reverently enacted by a well-chosen company, especially by Judith Anderson as the Mother of Jesus, by Margaret Webster (who also directed) as Mary Magdalene, and by Evelyn Varden as a third Mary; and Philip Barry's *The Philadelphia Story*, an entertaining comedy of certain phases of high life in that austere city, written for Katharine Hepburn and skilfully cut to measure to demonstrate to the best advantage the growth of her talent since her last previous appearance on the New York stage some five years back. Capital work was likewise done in this play, which also had a run lasting beyond the year, by Shirley Booth, Joseph Cotten, Van Heflin, Forrest Orr, Nicholas Joy, and Vera Allen. Completeness demands the addition to the record of *The Hot Mikado*, one of the season's two "swing versions" of the Gilbert and Sullivan masterpiece, this one with a Negro cast headed by Bill Robinson, a production which was later transferred, in abbreviated form, to the New York World's Fair.

April, similarly, is remembered for only two entirely new offerings. One was a highly original joyous allegory, *My Heart's in the Highlands*, about a struggling but irresponsible poet, his young son, and his dead wife's Armenian mother, written by William Saroyan, himself an Armenian, and most engagingly performed by Philip Loeb, young Sidney Lumet, Hester Sondergaard, Art Smith as a superannuated actor, William Hansen as a sympathetic groceryman, and other whimsical spirits, including two more pleasant youngsters, Jackie Ayers and Mae Grimes. This was a Group Theatre presentation. The other was S. N. Behrman's bright, sophisticated piece, *No Time for Comedy*, with Katharine Cornell appearing for the first time in several years in the fashionable finery of the day. The star's own attractive performance was ably seconded by those of Laurence Olivier, Margalo Gillmore, John Williams and Robert Flemyng. These two items, together with sufficient new material injected into the revue, *Pins and Needles*, current since the autumn of 1937, to warrant the term 1939 Edition, brought the season to a close.

During the vacation period the summer theatres throughout the country displayed approximately average activity, with the customary division of their efforts between revivals of established successes and tryouts of new works tentatively designed for future use on the regular commercial stage. Few of the latter had reached their goal, however, when the year ended.

Except for the early July opening of a musical item, *Yokel Boy*, employing the talents of Buddy Ebsen, the three Canovas, and numerous other entertainers, and a late August presentation of a more than usually unblushing edition of George White's *Scandals*, featuring Willie and Eugene Howard, it was mid-September before the new season was definitely under way.

The first novelty then disclosed was the *Straw Hat Revue*, a pleasant and highly diverting set of sketches, songs, and dance numbers assembled from the weekly programs of a semi-professional Pennsylvania summer organization. Most of the skits were the work of Max Liebman, the lyrics and tunes by Sylvia Fine and James Shelton. The amusing Imogene Coca was the chief performer, ably aided and abetted by Danny Kaye, Alfred Drake, Ruthanna Boris, Bronson Dudley, and various other members of the group. Then came an hilarious, slap-dash farce, *See My Lawyer*, by Richard Maibaum and Harry Clork, played by Milton Berle, recruited from the musical stage for the occasion, Millard Mitchell, Teddy Hart and, later in its course, Ezra Stone.

But it was October that really set the pace with a quick succession of decisive hits. First in order was Samson Raphaelson's *Skylark*, a comedy on an evidently not quite threadbare topic, the neglected wife, made memorable by the delightful, spontaneous, resourceful acting of Gertrude Lawrence, with excellent support from Donald Cook, Glenn Anders, and Vivian Vance. The next was *The Man Who Came to Dinner*, written to order for, and to the measure of, Alexander Woolcott, who, however, upon its tardy completion found himself prevented by other contracts from portraying the character patterned after his own personality, foibles, and idiosyncrasies. George S. Kaufman and Moss Hart were the joint authors and the chief role was played by Monty Woolley with complete success from the standpoint of amusement, with Edith Atwater, Carol Goodner, and John Hoyt as pleasantly involved. Then *Ladies and Gentlemen*, an adaptation from the Hungarian of Ladislav Bus-Fekete by Charles MacArthur and Ben Hecht for the express use of Mr. MacArthur's wife, Helen Hayes, an agreeable though undistinguished comedy concerned with the jury of a protracted murder trial to which distinction was added by the acting of Miss Hayes and Philip Merivale. Fourth in order came a musical piece, *Too Many Girls*, with book by George Marion, Jr., and score by Rodgers and Hart, a gay, lively work dealing with college life, football, etc., whose cast was competently headed by Marcy Wescott, Hal LeRoy, and Mary Jane Walsh. And finally William Saroyan's *The Time of Your Life*, an interesting, highly optimistic drama of human values written in a style original with this extraordinary Armenian author, defying all known laws of play construction yet achieving the desired goal notwithstanding. This production was under the combined auspices of the Theatre Guild and Eddie Dowling, with the latter figuring also as co-director (with Mr. Saroyan) and as principal actor, in which capacity he was given valuable support by Julie Haydon, Edward Andrews, Len Doyle, and an admirably selected array of other talent. In contrast to these triumphs October brought also one creditable failure in an offering by the Surry Theatre group, from Maine, of Chekhov's baffling *Three Sisters*, an item so characteristically Russian that, no matter how ably it is staged in other languages, English particularly, it seems to lack the elements essential to popularity.

In November the hits and the casualties were about evenly divided. But the seven or eight items in the latter category were fully offset by the arrival of several of the more noteworthy presentations of the autumn season. In *Margin for*

Error Clare Boothe turned from her familiar brand of withering satire to melodrama, touching upon present-day Nazi complications in our own United States, with Bert Lytell, Otto L. Preminger, Sam Levene, Elspeth Eric, Bramwell Fletcher, and Leif Erickson among those engaged in voicing her characteristic incisive dialogue. Out of the late Clarence Day's delectable volumes of boyhood recollections of his home life and his parents Howard Lindsay and Russell Crouse concocted a comedy to which was applied the title of the first of Mr. Day's books in the series, *Life With Father*. And although the verisimilitude of the characters of the play to those doubtless truthfully portrayed by the autobiographer was open to serious question, and although most of the action of the stage version was original with the dramatists, there was no question whatever as to the amusing and enjoyable qualities thereof. Mr. Lindsay himself had the role of Father and played it with broad humor, occasionally approaching caricature, while his wife, Dorothy Stickney, was wholly engaging as Vinnie, or Mother. The part of the eldest of the four Day boys, Clarence, Jr. (the ultimate author), for whose benefit a thread of adolescent love was inserted, was pleasantly taken by John Drew Devereaux, grandson of the late John Drew. Then in *Very Warm for May* those experienced purveyors of musical comedy, Oscar Hammerstein, 2nd, and Jerome Kern, joined forces again after a considerable interval and turned out a gay and tuneful sample of their co-operative efforts, equipped with a plot concerned with an experimental summer theater workshop, thereby providing broad scope for action and stage effects. Jack Whiting, Eve Arden, Grace McDonald, and Frances Mercer were among those prominently occupied with the singing, dancing, romantic, or comic features, and the veteran Donald Brian appeared briefly in the opening scene in a straight role.

Another dramatization from a book was *The World We Make*, Sidney Kingsley's acting version of Millen Brand's novel, *The Outward Room*. This story of a young girl whose mind gives way under the stress of unhappy home life and grief, who escapes from the mental institution to which she has been committed, and eventually works out her own salvation by ministering to the needs of others made an uncommonly heart-warming play. The part of the girl was competently filled by the actress who calls herself simply Margo, and two other important roles were correspondingly well handled by Herbert Rudley and Rudolph Forster. One of the settings, a commercial steam laundry in operation, was exceptionally realistic. Maxwell Anderson's fall contribution was *Key Largo*, a poetic tragedy of idealism, treachery, and redemption against a background of the recent war in Spain and, later, of the portion of Florida that gave the piece its name. For the principal character Paul Muni was lured back to the speaking stage and gave a distinguished performance. Uta Hagen and Jose Ferrer also participated to excellent advantage. Last, but far from least, of the more notable events of November was the appearance of Ethel Barrymore in Noel Langley's *Farm of Three Echoes*, a comedy (as here played) with a South African setting. The star's role was that of Ouma Gerart, an eccentric matriarch of 97 years, four years younger than her last previous part in *Whiteoaks*, and although there is ground for the

impression that the author regarded the character, with its psychic phase, seriously, Miss Barrymore portrayed it as a straight comedy creation with altogether delightful effect. McKay Morris figured briefly and vividly as her hated son, and Ann Dere, Dean Jagger, and Priscilla Newton likewise gave genuine support.

Other creditable, though less noteworthy, items in the November program were Robert Ardrey's *Thunder Rock*, staged by the Group Theatre, a drama of life in an isolated lighthouse with ghostly complications, which, for a short period only, employed the talents of Luther Adler, Morris Carnovsky, Frances Farmer, Myron McCormick, Art Smith, and Roman Bohnen; and Paul Osborn's whimsical comedy of middle age, *Morning's at Seven*, which, with Jean Adair, Dorothy Gish, Kate McComb, Effie Shannon, John Alexander, Enid Markey, Thomas Chalmers, Russell Collins, and Herbert Yost all agreeably involved, more than lasted the year out. Among the failures the most colossal was *Swingin' the Dream*, the much-publicized effort to inject modern dance rhythm into Mendelssohn's music and a Negro cast into Shakespeare's *Midsummer Night's Dream*.

December, in so far as its new productions were concerned, proved calamitous despite fairly high, though, alas, not well-founded, expectations from such offerings as Frederick Lonsdale's *Foreigners*, to appear in which Richard Ainley came all the way from England; Lesley Storm's London light comedy hit, *Tony Draws a Horse* (William A. Brady, the New York producer, changed Tony to Billy), imported for the use of Grace George; J. B. Priestley's *When We Are Married*, as presented with Estelle Winwood, Alison Skipworth, J. C. Nugent, Tom Powers, Ann Andrews, and A. P. Kaye; *Kindred*, by Paul Vincent Carroll, author of two recent successes in as many seasons, as played by Aline MacMahon, Barry Fitzgerald, Arthur Shields, Wallace Ford, and Aideen O'Connor; and Dr. Gustav Eckstein's clinical, psycho-analytical *Christmas Eve*, painstakingly staged by Guthrie McClintic with a cast including Katherine Locke, Beth Merrill, James Rennie, Mildred Natwick, Kent Smith, and young Sidney Lumet. But the month was not entirely in the red column, for Maurice Evans brought back for a limited return engagement his unabridged production of *Hamlet* with virtually the same personnel as on its first visit, and Ethel Merman and Bert Lahr arrived as co-stars in B. G. de Sylva, Herbert Fields, and Cole Porter's *DuBarry Was a Lady*, a brazenly indecorous but exceedingly mirthful musical that promptly took rank as the most sought-after item in its current category.

English Production. London, notwithstanding her preoccupation with the menace of imminent warfare, calmly indulged in a far more active winter and spring season than did more mercurial Paris, where play production was uncommonly light. In fact, the British equivalent of America's International Ladies' Garment Workers' Union shrewdly judged the moment opportune for staging a biting satire on "appeasement," with music, entitled *Babes in the Wood*, which was privately produced to elude the censorship and became quite the rage. And as if in preparedness for the need of amusement when war should break out, there was a sudden influx of new plays. Among them, *They Walk Alone*, by Max Catto, was sheer, stark melodrama with

psychic implications, an artistic presentation, however, with Beatrix Lehmann and Carol Goodner. Noel Coward's *Design for Living*, several years after its appearance in America, was received without much acclaim though with a cast including Anton Walbrook, Diana Wynyard, Rex Harrison, and Alan Webb. Lesley Storm's comedy, *Tony Draws a Horse*, later to fail in New York, scored a substantial run, despite its tame humor, with Lilian Braithwaite and Diana Churchill in its leading roles. *Gas Light* was another skilfully contrived melodrama by the author of the earlier thriller, *Rope*; while *Little Ladyship*, an adaptation by Ian Hay from a Hungarian source, succeeded in spite of its commonplaceness.

The peak of the season arrived with March, at which time J. B. Priestley's symbolic *Johnson Over Jordan*, an ambitious and interesting modern morality play speculating on what may come after death, was seen, though but briefly. Better fortune attended Basil Bartlett's translation of François Mauriac's *Asmodée*, an outstanding success of the previous year at the Comédie Française in Paris. The English version of this tragedy of misdirected loves, which conveys an effect of new and original dramatic form, was first offered at one of London's smaller theaters and later, by virtue of its popularity, transferred to a larger house and retitled *The Intruder*. The acting organization of the Comédie Française itself came over for a welcome visit in a limited repertory of familiar French classics. Karel Čapek's posthumous and oddly prophetic drama of the invasion of his natal Czecho-Slovakia, *The Mother*, in a translation by Paul Selver and Miles Malleson, attracted more interest in England, despite its confusing argument and ghostly characters, than it was subsequently to do in America, yet Benn Levy's *The Jealous God*, a serious treatise on the dangers of the divided purpose, was promptly rejected. Ghostly characters figured again, though clumsily, in Keith Winter's unimpressive *We at the Crossroads*. But Arthur Macrae, a young actor, disclosed, in *Sugar Plum*, a pleasant new light talent as a playwright besides appearing in his own work along with Ronald Squire and Kay Hammond, daughter of the late Sir Guy Standing.

As the season entered upon its downward curve came a drama by T. S. Eliot, *The Family Reunion*, written in fairly free verse and emphasizing the difficulty of successfully combining, without incongruity, Greek legend, such as that of Orestes, with modern English scenes and characters. Leslie Banks made an appearance in a grisly, pseudo-scientific melodrama, Barré Lyndon's *The Man in Half Moon Street*, and Ivor Novello, with his agreeable, tuneful musical piece, *The Dancing Years*, solved the problem of how to keep the vast Drury Lane Theatre profitably going in the off-season for pantomime and the like. In this he was competently abetted by Mary Ellis, back in a singing role. And Aubrey Danvers-Walker contributed a realistic study of life in the north of London with *Heaven and Charing Cross*. To these were presently added a couple of plays emanating from the United States—John Steinbeck's *Of Mice and Men*, which, with a British cast, was so enthusiastically received as shortly to outgrow the little Gate Theatre, where it was first shown, for a larger house; and Clare Boothe's *The Women*, whose bitter satire was found puzzling by Londoners.

At Easter time the 60th annual Shakespeare

festival was observed at Stratford-on-Avon where, in recent years, the new Memorial Theatre has developed into a prosperous institution. The novelty for 1939 was a production, under the direction of Theodore Komisarjevsky, of *The Taming of the Shrew* with the ordinarily negligible part of Christopher Sly promoted to chief prominence and played by Jay Laurier, while the Katharine and Petruchio were Vivienne Bennett and Alec Clunes. This was followed by a considerably less noteworthy presentation of *As You Like It*.

Late spring gave London an interesting, straightforward drama of the fortunes of two sisters, the first play from the pen of H. E. Bates, the novelist, which he called *Carrie and Cleopatra*; also Rutherford Mayne's distinguished work, *The Bridge*, imported from Dublin's Abbey Theatre, with Wilfrid Lawson as Stephen Moore; and an engaging new light comedy, *Grouse in June*. Then followed several items from France—a translation by Rodney Ackland of Alfred Ghéris's *Sixième Étage*; Jacques Deval's *Behold the Bride*, written in English, which had the much-needed advantage of an illuminating portrayal by Luise Rainer; and a version by J. Leslie Frith of Jean-Jacques Bernard's *The Springtime of Others*, an old piece revived. *Rhondda Roundabout*, by Jack Jones, disclosed a significant, more or less symbolic drama dealing with the crisis induced by the decline of the coal industry in Wales. Basil Sydney and Margaret Rawlings resuscitated Shaw's *Pygmalion*, and Roland Pertwee and Harold Dearden figured as the authors of an ingenious and adroit mystery and surprise play, *To Kill a Cat*. An especially interesting event of June was a visit of the Royal Theatre company of Greece with their impressive productions, in modern Greek, of *Hamlet* unabridged and the *Electra* of Sophocles.

In July John Gielgud brought to a close the distinguished career of the historic Lyceum Theatre, about to be torn down, with his new, reconsidered and matured portrayal of *Hamlet*. Fay Compton was the Ophelia and George How the Polonius. Terence Rattigan, author of the extraordinarily successful comedy, *French Without Tears*, tried his hand at a serious play in *After the Dance*. And two American works—Sidney Howard's *Alien Corn* and Irwin Shaw's *The Gentle People*, both equipped with British casts, received cordial welcomes upon their first showing in London. With summer came the usual open-air performances of Shakespeare in Regent's Park, *A Midsummer Night's Dream* and *Julius Caesar* proving the favorites for the season. August witnessed also a new modern morality play based on the legend of Doctor Faustus in *The Devil to Pay*, by Dorothy L. Sayers.

The annual Malvern Festival of Drama in the same month was pronounced an artistic failure. Three of the half dozen new works there disclosed were distinct disappointments—James Bridie's *Let Them Say*, S. I. Hsiung's *The Professor from Peking*, and one entitled *Dead Heat* by Sir Robert Vansittart, the distinguished diplomat; of the remainder, *Old Master*, by Alexander Knox, gave evidence of real promise. *Big Ben*, by Evadne Price and Ruby Miller, proved a typical commercial item rather than what is expected out of Malvern, while the last was Bernard Shaw's attempt to whitewash the reputation of Britain's Merry Monarch, Charles II, in *Good King Charles's Golden Days*, and,

as such, commanded at least respectful attention.

The London autumn season was just about getting under way, mainly with trivialities though also with a delightful revival of Wilde's *The Importance of Being Earnest* by John Gielgud with himself, Edith Evans, Jack Hawkins, Peggy Ashcroft, and Gwen Ffrangcon-Davies in its bill, when the long-impending hostilities broke out and the theaters in the city proper were closed by Government regulation as a precaution in the event of air raids. For some weeks thereafter various aggregations went a-touring, while others confined their activities to the small playhouses off the beaten track. In one of these a revised and improved version of J. B. Priestley's *Music at Night* was staged, and in another, used as a temporary shelter for the Old Vic, *Romeo and Juliet* was presented with Robert Donat, the screen star, and Constance Cummings in the title parts and Marie Ney as the Nurse, with all three regarded as miscast. But as time went on and nothing much occurred to cause alarm, the restrictions were gradually lifted and the West End houses resumed operation, mainly with established hits of the lighter kind, such as Jack Hulbert and Cicely Courtneidge's gay revue, *Under Your Hat*, though also with an occasional serious item selected for timeliness of theme, for example Elmer Rice's dramatic tale of the rise and fall of a dictator, *Judgment Day*. A new production of the more sober order was Max Catto's *Punch Without Judy*. Another was an uncommon type of murder play, *Ladies in Retirement*, by Edward Percy and Reginald Denham, which had Mary Clare and Mary Merrall for protagonists; and still another a none-too-successful effort to condense Dickens' *Great Expectations* into the confines of a stage version. By Holiday time nearly 30 first-grade theatres were in use, slightly more than were operating in New York. And the year ended with Beatrice Lillie's appearing, at her best, in a new revue, *All Clear*; with an offering entitled *You, of All People*, chiefly noteworthy for the presence of Leslie Banks and Margaret Rawlings in its cast; and with a modern-dress production of Shakespeare's *Julius Caesar* in which Godfrey Tearle was the leading figure.

The other London, in Ontario, was the scene, in April, of the Canadian Dominion's seventh annual Drama Festival, in the course of which some 14 plays were offered in competition by "Little Theatre" organizations from the various provinces.

The Continent. The French theater, as already indicated, was quiescent throughout most of the year. The few Paris houses that were in operation at the actual outbreak of war were promptly closed, partly as a similarly precautionary measure to that which more briefly darkened those in London, partly because so many of the men concerned were required for the army. And thus the situation remained until, in October, the Comédie Française inaugurated a schedule of four performances a week.

In Berlin, oddly enough, despite war conditions, blackouts, and the like, dramatic activity proceeded normally, or even better, though under circumstances that called for frequent, and in some cases almost daily, changes of bill. An exception to this rule was found, however, in Heinz Coubier's comedy, *Aimée*, which, with Olga Tschechowa in the title part, passed its 200th

showing in October. A new drama by Gerhard Hauptmann on a mediaeval subject, *The Daughter of the Cathedral*, met an enthusiastic reception, and, later, there was much expectancy from an historical work by Curt Langenbeck written around the personality of Jacob Leisler, a German hero of 1691 in old New York. *High Treason* was the title. Gustaf Gruendgens appeared in productions of Shakespeare's *Hamlet* and *King Richard II.* Other outstanding offerings were a comedy by Lope de Vega, *The Knight of the Miracle*, adapted into German by Hans Schlegel, Fritz Schiefert's *The Great Comedian*, and a piece entitled *Lucky Candidate*, by Hans Mueller-Schloesser, presented with the popular radio star, Ludwig Manfred Lommel, in its leading role.

The Scandinavian countries, year by year, evince a growing love of drama both native and cosmopolitan, substantial as well as ephemeral. Sweden, particularly Stockholm, experienced an especially active season. From France came, as also to London, a translation of Alfred Gheri's comedy of Montmartre tenement life, *Sixième Etage*, scoring a success, as it had done in Paris the preceding year; and from Copenhagen Kaj Munk's play on the topic of dictators, *He Sits in a Crucible*, with every evidence of duplicating its home popularity. There was a gay, novel revue by Alf Henriksen, and in the Spring Selma Lagerlof's beloved and moving *Dunungen*, now accepted as a native classic, was presented in celebration of her 80th birthday, as had previously been done on her 70th. Signe Hasso portrayed the title part. June witnessed the climax of the season in Vilhelm Moberg's *Kyskhhet (Chastity)*, a subtle modern work written in reaction against European pessimism, and introduced by an impressive prologue of the temptation of St. Anthony. Olof Widgren distinguished himself by brilliant performances as both saint and hero. Then followed the usual revivals of Strindberg dramas; likewise a humorous piece by Sigge Fischer, *Suitor from Kisa*, and two more from Denmark—*The Victor*, by Munk, and an entertaining item by Svend Rindom, *Pricken*, played by the popular comedian, Elof Ahrle. September brought a gay satirical revue, *Tattar-Adel (Bohemian and Noble)* by Kar de Mumma, along with several other popular musicals of minor importance, and another feature of the Fall season was a translation, as *Golden Wedding*, of Dodie Smith's charming British *Dear Octopus*, which was warmly welcomed.

Conspicuous among the offerings of the Oslo stage, meanwhile, were a sincere and uncommonly moving work entitled *Mens vi venter (While We Wait)* by the brilliant young native Norwegian journalist, Johan Borgen, a skilfully original handling of the Pirandello type of theme; Per Aabel's pleasing *Forandring fryder?,* and John Knittels *Via mala*, from the Swiss, a combination of mystery and folk drama. And in Copenhagen a tendency was visible for the newer dramas to reflect contemporary life in the Danish capital. The outstanding example was Ejnar Howalt's *Jeg skal ha' et Barn (I Shall Have a Child)*, a clever, witty problem comedy designed for the Bohemian element, with its principal role taken by Tove Grundjoan. A more serious work was Kjeld Abell's *Anna Sophie Hedwig*, and a pronounced success of American origin was a Danish version of Maxwell Anderson's fantastic *High Tor*.

See EDUCATION; for published plays, see LIT-

ERATURE, ENGLISH AND AMERICAN, and the articles on the literature of foreign countries.

RALPH W. CAREY.

DRESS. See FASHION; GARMENT INDUSTRY.
DROUGHT. See LIVESTOCK.

DRUGS. See FOOD AND DRUG ADMINISTRATION; MEDICINE AND SURGERY; NARCOTICS CONTROL.

DUKE UNIVERSITY. An institution of higher education in Durham, N. C., which, having its origin as York Academy in 1838, was expanded in 1858 into Trinity College and in 1924, through the benefactions from James B. Duke, into Duke University. The enrollment for the autumn of 1939 was 3536. The 1939 summer school enrollment was 2608. The regular faculty numbered 424. The endowment funds amounted to over \$34,000,000, while the income for fiscal year ended June 30, 1938 was \$3,437,702. The library contained 570,000 volumes. President, William Preston Few, Ph.D., LL.D., Litt.D.

DUNKERS. See BRETHREN, CHURCH OF THE.
DUST STORMS. In 1939 these were not so widespread or destructive as in several recent years, though occasional storms were, locally, as severe as any experienced since 1930, when the great drought of that year caused widespread dust-blowing. Neither were the dust storms of this year as numerous as in recent years. The dust storms of this year were confined to the States in, and immediately to the east of, the Rocky Mountains and were most prevalent in May and June.

DUTCH EAST INDIES. See NETHERLANDS INDIES.

DUTCH ELM DISEASE. See ENTOMOLOGY, ECONOMIC.

DUTCH GUIANA. See SURINAM.

DUTCH REFORMED CHURCH. See REFORMED CHURCH IN AMERICA.

DUTCH WEST INDIES. See CURAÇAO; SURINAM.

DUVEEN OF MILBANK, BARON, JOSEPH DUVEEN. A British art dealer, died in London, May 25, 1939. Born in Hull, Oct. 14, 1869, he was educated at Brighton College, and in 1887 entered the firm of Duveen Brothers, founded by his father. Subsequently he became senior partner and was instrumental in the great expansion of the business. It was not until after the World War that he became really famous in his field—when, in 1922, he purchased Gainsborough's "The Blue Boy" for the late Henry E. Huntington. The highest price he was supposed to have paid for a work of art was \$875,000 for Raphael's "Madonna and Child" in 1928. In addition to his duties as head of Duveen Brothers, he was frequently called upon as an art expert.

His donations to the world of art were many and included several galleries for modern works and one for works by Sargent to the Tate Gallery in 1936, and in 1937 a new gallery to house sculpture. In 1932 he presented a gallery for Italian primitives to the National Gallery, and donated a new building to the National Portrait Gallery in 1933. Also, he endowed a chair for the History of Art at London University and gave several works of art to museums, notably the "Graham Children," by William Hogarth, to the National Gallery.

A trustee of the National Gallery (1929-36), of the Wallace Collection after 1925, of the National Portrait Gallery after 1933, and of the Museum of Modern Art, New York after 1934 he founded the British Artists Exhibitions Or-

ganization for the encouragement of lesser known artists. He was honored by several foreign countries, received the gold medal of the Royal Society of British Sculptors, and was raised to the peerage in 1933. During the Spanish Civil War he was active in the movement to remove Spanish art treasures from that country for safe keeping.

DYSON, SIR FRANK WATSON. A British astronomer, died at sea on a voyage to South Africa, May 25, 1939. Born at Ashby, England, Jan. 8, 1868, he was educated at Trinity College, Cambridge, and in 1899 became secretary to the Royal Astronomical Society, serving until 1905. He was chief assistant at the Royal Observatory, Greenwich, from 1894 to 1905, astronomer royal of Scotland, 1905-10, and astronomer-royal and director of the Greenwich Observatory from 1910 to 1933 when he retired.

The "official timekeeper for the entire world," and the man chiefly responsible for the development of the Observatory, Dyson became a fellow of the Royal Society in 1901, the recipient of the royal medal in 1921, was knighted in 1915, and served as president of the International Astronomic Union (1929-32). He verified Einstein's theory of the effect of gravitation on light during the eclipse of 1919. After 1928 he made available to the world the exact time by broadcasting the magnified sound of one of the Greenwich clocks.

A frequent contributor to the scientific press, he wrote *Determination of Wave Lengths from Spectra Obtained at the Total Solar Eclipses of 1900, 1901, and 1905* (1906), *Astronomy, A Handy Manual for Students and Others* (1912), and, with R. Woolley, *Eclipses of the Sun and Moon* (1937).

EARLE, REAR ADMIRAL RALPH, U.S.N., RET. An American naval officer, died in Worcester, Mass., Feb. 13, 1939, where he was born, May 3, 1874. Graduating from the U.S. Naval Academy in 1896, he saw service during the Spanish-American War, served on various naval vessels, and in 1905 became inspector of powder for the East Coast. Two years later he served on the *Maine* and in 1908 on the *Galveston*. During 1908-10 he served in the Philippines and then was assigned to the Naval Academy, returning to sea service on the *Iowa* in 1911. Again assigned to the Naval Academy, he was head of the discipline department (1911-13) and of the English department (Aug.-Sept., 1912) and was a member of a special board on naval ordnance (1912-13). During 1913-15 he was on sea duty, and then was again assigned to the Naval Department as head of the department of ordnance and gunnery (1915-16), and of the English department (June-Aug., 1916).

On Dec. 23, 1916, Earle was appointed chief of the Bureau of Ordnance of the Navy Department with the rank of rear admiral, and in 1919 he was given command of the U.S.S. *Connecticut*, with the rank of captain. He was chief of staff of the control force on the U.S.S. *Florida*, 1921-22, and attended the Naval War College in 1922-23. Thereafter he commanded the Naval Torpedo Station at Newport, R. I., until 1925 when he retired to accept the presidency of Worcester Polytechnic Institute. He was advanced to rear admiral on the retired list in 1930.

An authority on ordnance, Admiral Earle contributed to the *Proceedings* of the Naval Institute and wrote *Life at the Naval Academy* (1917) and *Practical Interior Ballistics* (1917).

EARTH DAMS. See DAMS.

EARTHQUAKES. Estimates as to the actual number of earthquakes which are felt in some part of the world each year differ widely, partly because seismological observatories are not regularly distributed over the earth's surface. Sieberg has estimated that 9000 earthquakes take place each year, and his estimate is considered reliable by many seismologists. Fortunately, the vast majority of quakes are either feeble and harmless or else occur under the sea or in thinly populated regions. According to Peterschmitt, of the Bureau Central Seismologique de Strasbourg, during the four-month period of March to June, 1939, there were 504 earthquakes felt by people or registered by seismographs. Of these probably about one-fourth were of sufficient strength to have the epicenter determined accurately either by isoseismal lines or from instrumental recordings. If Peterschmitt's reports are representative, they mean that in an average year there are somewhat less than 400 earthquakes strong enough to have determinable epicenters, and this figure agrees well with other estimates. It is also difficult to determine the mean annual loss of life caused by earthquakes. Some years ago Davidson estimated that in an average year 14,000 persons are killed by earthquakes; a couple of years later he revised his estimate and reckoned that the average number of lives lost each year in the earthquakes of the whole world is about 28,000. Heavy quakes often occur in remote regions and are known to have happened only from the records made by seismographs over the globe; even from some populated regions direct news is sometimes weeks or months in reaching the rest of the world. In the United States alone more than 200 earthquakes are usually reported annually.

In destructive earthquakes reports of the loss of life are never wholly accurate; there were two such earthquakes in 1939, the loss of life being very great in each. These were the earthquakes in Chile in January and in Turkey in December. It can be stated with definiteness that the loss of life by earthquakes in 1939 was greater than for any year since 1935. Possibly, the loss of life in 1939 was greater than in any year since 1923 when the great Japanese earthquake occurred.

Chile. About midnight, local time, of January 24-25 an earthquake took place in Chile. The epicenter was very near Chillán, a town of about 45,000 inhabitants and 40 miles northeast of Concepción. The shock was so strong that it was recorded on seismographs throughout the world; at the observatories at La Plata and Buenos Aires the needles of the seismographs went off the drums. The descriptions of persons surviving the earthquake emphasize the severity of it. Some people had experienced other earthquakes, such as that of Valparaíso in 1906, and were able to compare the severity of the two, and all agreed that the 1939 earthquake was extremely severe and that the initial shock was vertical. Estimates of the duration of the initial shock varied from one to three minutes. The belief was that the earthquake was very violent and that the Chileans had never experienced another of equal intensity.

Chile is one of the great seismically active regions in the world and part of the circum-Pacific ring of instability. The city of Concepción has had an unfortunate history seismically, having been severely damaged on no fewer than six occasions prior to 1939. These were 1570, 1657, 1730, 1751, 1835, and 1898.

The 1939 earthquake was not only severe, but very extensive also. It was felt from Valparaíso in the north to Puerto Montt in the south; the area where it was felt being estimated at 300,000 square miles. The isoseismal line of 9 (Modified Mercalli Scale) extended from north of Talca to south of Los Angeles, a distance of about 200 miles along its major axis, and in both of these cities large scale damage was done. The isoseismal line of 10 included the cities of Parral, San Carlos, Chillán, and Concepción.

Naturally the damage to property was great. Chillán suffered the most, and next to it, Concepción. At Chillán, two walls of the massive cathedral, the post office and telegraph building, the infantry barracks, two theaters, and most of the dwelling houses collapsed immediately. The initial shock cut off the supply of electric power and water. At Concepción, the fourth largest city in Chile, situated near the mouth of the Bio-Bio River and with a population of 89,000, three-fifths of the city was left in ruins and many famous buildings, including the Teatro Campo Club and the hospital, were destroyed.

By good fortune, in all this destruction no sea wave at Concepción accompanied the earthquake. In this respect the 1939 earthquake was similar to the 1898 one. The other five earthquakes at Concepción were all accompanied by sea waves, that of 1835 having a sea wave 28 feet high.

Following the initial shock, aftershocks were frequent and in some cases of considerable severity. There were severe disturbances on the nights of January 27 and 28. On January 30 a severe shock with the same epicenter occurred and completely demolished the few remaining buildings at Chillán.

Altogether, approximately 25,000 people were killed, 50,000 injured, and 100,000 made homeless by the Chilean earthquake of 1939. See CHILE under *History*.

Turkey. On the night of December 26-27, between 1:57 a.m. and 5 a.m. local time of the 27th, an unusually severe earthquake took place in Turkey. The epicenter was about 75 miles south of the Black Sea coast and about midway between the cities of Sivas and Erzinjan. This latter city, a prosperous trading center dealing in silk, cotton, and copper, is at an altitude of 4000 feet above sea level with a population of 15,000. The severity of this earthquake is forcefully brought out by the fact that about 80 per cent of people of this city were killed. This shock was certainly world-shaking, so far as modern seismographs are concerned, for it was registered throughout the world. The seismograph at West Bromwich in England, at a distance of about 2500 miles from the epicenter, was damaged by the quake.

The whole of Asia Minor is a seismically active zone. Prior to the present shock earthquakes appeared to be growing in intensity and frequency. In 1784, Erzinjan was devastated by a severe earthquake, though that shock was not so severe as this latest one. Indeed, the present earthquake appears to be the most severe that Turkey has ever suffered.

The area covered by the quake was large. The isoseismal line of 7 (scale 7 indicates that damage has been negligible to buildings of good design and construction, but considerable in poorly built structures) extended from Ankara in the west nearly to Mt. Ararat in the east, and the isoseismal line of 9 (Modified Mercalli Scale) extended from Boghaz-Köi in the west to Toprak-Kale in

the east, a distance of about 450 miles along its major axis. The isoseismal line of 10 included the cities of Yozgat, Sivas, Tokat, Amasya, Samsun, Giresun, Malatya, Erzinjan, Erzurum, Gumushane, Pülümür, and Ordu. The devastated area covered about 15,000 square miles, but the isoseismal line of 10 includes an area greater than this. The area where this earthquake was felt by people probably exceeded 180,000 square miles. Though this is less than the corresponding figure for the Chilean earthquake in January, the isoseismal line of 10 includes an area considerably greater than for the Chilean earthquake.

The damage to property was immense. Sivas, a city of about 50,000 people, the center of caravan routes and a collecting place for the agricultural produce of the surrounding districts, and Tokat, a city of about 30,000 people with a thriving cotton manufacturing industry, as well as the villages situated between these cities, were practically wholly destroyed. The cities of Yozgat and Amasya, somewhat further removed from the epicenter, were both left in ruins. At Samsun, a seaport on the Black Sea with a population of 15,000 and with a thriving export trade, schools, and other public buildings—many of them built of reinforced concrete—as well as private houses, were destroyed. All other villages and cities situated within the isoseismal line of 10 suffered similarly. The upsetting of oil lamps and stoves and the breaking of gas pipes caused many fires to break out in the cities affected, which the few surviving fire brigades could not extinguish on account of broken pipe lines and huge cracks in the roads and streets. Telephone and telegraph communications were also disrupted.

Most of the geological faults already known in the area have shifted, causing large crevices and permanent lateral movement. One of the principal faults along which movement took place was estimated to be 16 miles deep, and many new faults were formed. In the mountainous district between Amasya and Tokat there were ground fissures 12 yards wide, out of which issued smoke and sulphur fumes and jets of boiling water.

News of some 500 villages to the east of Erzinjan was still incomplete at the end of the year. The total deaths were estimated at 45,000 people, the injured 20,000, and about 2,000,000 people were left homeless. Great as the estimated number of deaths was, it seems small in view of the reliable reports of the earthquake's severity. It is extremely rare for a shock to have intensity 12 (12 being a shock where damage is total, waves being seen on ground surfaces, and objects thrown upward into the air), and the isoseismal line of 12 for this earthquake embraced a considerable area. Moreover, the earthquake took place at night when most of the inhabitants were asleep, and it is known that many people, in bed at the time of the first shock, were buried alive in the wreckage of their homes. Also the single-storied mud houses of the peasants were easily destroyed. Finally, the meteorological conditions following the earthquake were bad; heavy rains and snows caused floods, and these were followed by a severe cold wave on December 28.

Other Shocks. Other earthquakes, fortunately of much less intensity but nevertheless worthy of mention, occurred during the year. On January 6, an earthquake of considerable intensity shook Quetta, in Baluchistan. No damage or casualties were reported, and this shock owes its interest to the fact that a very destructive earthquake shook

Quetta in 1935, and the buildings of new Quetta are of reinforced concrete and brick, attention having been paid to earthquake-proof design. The new buildings withstood this earthquake very well.

The entire village of Aikawa, Japan, disappeared into the sea when coastlines from Cape Nyodo to Lagoon Hachiro crumbled as the result of an earthquake on May 1. About 1000 homes were destroyed. On June 22, there was an earthquake in the Gold Coast Colony, Africa, in which 17 people were killed. An earthquake of considerable intensity shook the district around Smyrna, Turkey, on September 22. The villages of Pergame, Kotchile, and Fotcha were very hard hit, and about 200 people were killed and 5000 left homeless. On September 27 there were 18 earthquakes within 24 hours, all strong enough to be felt by people at Ankara, Turkey. There was some damage, but no loss of life.

On November 15 an earthquake was registered on the seismograms at the observatories of Weston, Georgetown, Ottawa, Pittsburgh, Fordham, Williamstown, and Philadelphia. The epicenter of this shock was computed to have been near Latitude 40° N, Longitude 75° W, being south of Philadelphia and east of Wilmington, with a depth of focus of about 16 miles below the earth's surface. The interest of this earthquake lies in the fact that it reached intensity IV on the Rossi-Forel Scale in a well-populated district, yet caused no damage. It is very unusual to have an earthquake so strong as this one in this region.

There was an earthquake in Turkey on November 23, when an intense shock caused much property damage and killed 43 people in Anatolia. On December 21, San José, Costa Rica, experienced the most severe earthquake it had known since 1923, but no casualties were reported. See SEISMOLOGY.

RICHMOND T. ZOCH.

EAST PRUSSIA. A province of Prussia, Germany. Area, 15,061 square miles; population (June 16, 1933), 2,333,301. Capital, Königsberg (335,000 inhabitants in 1937).

ECOLOGY. See BOTANY.

ECONOMIC ASSOCIATION, AMERICAN. An organization founded at Saratoga, N. Y., in 1885, to encourage economic research, especially the historical and statistical study of the actual conditions of industrial life, to issue publications on economic subjects, and to encourage perfect freedom of thought and discussion upon current problems from an economic point of view. The membership in 1939 totaled approximately 3000, plus 1400 subscribers (libraries, etc.). The annual meeting of the association was held in Philadelphia, Pa., Dec. 27-29, 1939. Among the topics discussed were: "Objectives of Monetary Policy," "Economic Issues in Social Security Policy," "Behavior of Bank Deposits in the Business Cycle," "Problems in the Teaching of Economics," "Price Control under 'Fair Trade' Legislation," "American Commercial Policy," "The Transportation Problem," "Preserving Competition versus Regulating Monopoly," "Theory of International Trade," "Collective Bargaining and Job Security," "Banking Reform through Supervisory Standards," "Incidence of Taxation," "Economic Planning," and "Economics of War." The officers in 1939: President, Jacob Viner, University of Chicago; vice presidents, John H. Williams, Harvard University, and Paul H.

Douglas, University of Chicago; counsel, John E. Walker, Washington, D. C.; and secretary and treasurer, James Washington Bell, Northwestern University.

ECONOMICS. See BUSINESS REVIEW; CO-OPERATIVES; FINANCIAL REVIEW; LITERATURE, ENGLISH AND AMERICAN; LABOR CONDITIONS; LIVING COSTS AND STANDARDS; PLANNING, ETC.

ECUADOR. A South American republic. Capital, Quito.

Area and Population. Ecuador's boundary dispute with Peru remains unsettled. The area claimed by Ecuador is officially estimated at 276,007 square miles, including the Galapagos Islands (2868 square miles). Estimated population on Dec. 31, 1937, 3,000,000 (about 10 per cent whites, 39 per cent Indians, 41 per cent mixed, and 10 per cent Negroes and Orientals). Living births in 1938 numbered about 113,345; deaths, 56,231. Estimated populations of the chief cities in 1937 were: Guayaquil (chief port), 139,886; Quito, 118,350; Cuenca, 45,497; Riobamba, 23,942.

Defense. The regular army had 701 officers and 6806 men in 1938. Compulsory military service was introduced on a small scale in 1935. There are artillery, aviation, and naval schools. An Italian mission instructs the army. Defense appropriations for 1939 were 29,414,000 sucres.

Education and Religion. The Indian and mixed races are largely illiterate. Enrollment in schools in 1937 was: Primary, 209,649; secondary, 5936; special training colleges, 3552; universities, 1476. Roman Catholicism is the predominant religious faith, but there is no state religion.

Production. Agriculture supports about 90 per cent of the people, but minerals produced by foreign-owned companies accounted for 62,216,000 sucres out of total exports of 169,095,627 sucres in 1938. Exports of cacao in 1937-38 were 18,500 metric tons; of coffee, 10,000 in 1938-39. Bananas, cereals, fruits, vegetables, sugar, and cotton also are grown. The forests yield tagua nuts, rubber, balsa wood, and kapok. Mineral production in 1938 was: Gold, 1370 kilograms; silver, 2.5 metric tons; petroleum, 302,000 metric tons. Straw hats and small quantities of textiles, paper, sole leather, banana flakes, and flour are the chief manufactures.

Foreign Trade. Imports in 1938 totaled 148,314,911 sucres (147,860,226 in 1939); exports, 169,095,627 sucres (164,840,543). The United States supplied 34.6 per cent of the 1938 imports (39.6 in 1937); Germany, 24.1 (24.1); United Kingdom, 7.7 (10.1). Of the exports, the United States took 37.5 per cent in 1938 (33.2 in 1937); Germany, 17.5 (21.9); France, 8 (12.2).

Finance. According to provisional returns, actual budget receipts in 1938 were 120,700,000 sucres and expenditures were 127,300,000. The ordinary budget estimates for 1939 balanced at 130,950,000 sucres; for 1940, 113,050,000 sucres. The foreign debt on June 30, 1939, was reported at \$26,470,000; internal debt on Dec. 31, 1937, 26,830,600 sucres. Exchange value of sucre, \$0.0878 in 1937, \$0.0708 in 1938.

Transportation. Ecuador in 1939 had about 773 miles of railway line in operation and 120 miles under construction. All lines carried 273,913 tons of freight in 1938. Highways extended 3852 miles, but part of them were impassable in wet weather. Four air services covering 554 route miles linked the chief cities. Pan American Grace Airways eliminated Quito as a stop on its

international service in July, 1939, and substituted a feeder service between Quito and Guayaquil. The German-Ecuadorean airline *Sedta* inaugurated a service connecting Cuenca, Salinas, Esmeraldas, and Guayaquil July 29, 1939. A total of 460 vessels entered Guayaquil in 1937.

HISTORY

Political Developments. The chaotic political conditions and economic depression that had characterized Ecuador's history during the preceding decade (see 1938 YEAR BOOK, p. 221 f.) grew worse during 1939. Dr. Aurelio Mosquera Narváez, who was elected Provisional President by the Constituent Assembly on Dec. 2, 1938, had dissolved the Assembly on December 13 and imprisoned some of the leading Leftist members supporting the presidential candidacy of former Provisional President Luis Larrea Alba. On Jan. 4, 1939, he released some of the prisoners and on January 15 Congressional elections were held under the new Constitution adopted by the Constituent Assembly Dec. 1, 1938. The Constitution granted the suffrage to all persons over 18 years of age and the women of Ecuador went to the polls for the first time. Nevertheless the election produced government majorities in both houses of Congress. The defeated Leftist parties charged that the result was due to fraud and other illegal government practices.

Purge of Opposition. When Congress met on February 1, it rejected the new Constitution. President Mosquera Narváez continued in office over Leftist protests despite the agreement made in December that Congress would elect a new President. The government announced that the 1906 Constitution was considered as in effect.

With majority support in Congress, the government proceeded to purge the schools and other public and semi-public institutions of opposition elements. The autonomy of the University of Quito was revoked and some of the professors, branded as Communists by the government, were dismissed. Leftist students struck and barricaded themselves in the university buildings. The strike spread to labor unions and was seized upon by anti-government politicians as a means of overthrowing the government. Late in March President Mosquera Narváez obtained extraordinary powers from Congress to curb this agitation. Troops ousted the university students and when the faculty resigned, the institution was closed for the rest of the term.

The government aroused further opposition by undertaking to revise the advanced labor legislation enacted in preceding years. Charges of misappropriating large sums from the Treasury were made against two former Provisional Presidents—Federico Páez, who fled the country in 1938, and Gen. Alberto Enríquez—and a number of their political associates. Government spokesmen charged that some \$37,500,000 had been illegally diverted from public funds during the Páez and Enríquez dictatorships of 1935–38.

Economic Difficulties. Meanwhile economic conditions were going from bad to worse, despite the partial relaxation on January 6 of the import control regulations that had hampered trade and business during 1938. The exchange value of the currency declined along with budget revenues, government salaries were unpaid, and the rising cost of living provoked unrest among peasants and laborers. High taxes and labor costs led some industries to leave the country. On September 11

the President amended the Labor Code by decree, permitting employers to increase the working week from 40 to 48 hours provided time and a half was paid for the hours over 40. The outbreak of the European war deepened the country's economic difficulties and led to the imposition of drastic price-control measures. The 1940 budget signed November 8 provided for the discharge of many government employees and other curtailments to match declining income.

Death of President. To increase the confusion, President Mosquera Narváez (q.v.) was stricken in his offices on November 14 and died three days later. Dr. Carlos Arroyo del Río, President of the Senate, was named Acting President pending an election set for Jan. 10–11, 1940. He removed restrictions on imports of foreign currency and gold, but the general political uncertainty and the refusal of the banks to advance credit led to virtual economic paralysis late in November. Dr. Arroyo del Río resigned as Acting President December 11 to run for President on the Liberal-Radical ticket. Ex-President José María Velasco Ibarra returned from exile to run against him.

Revolutionary Conspiracies. The above conditions were productive of repeated revolutionary outbreaks by Leftist elements during the year. In January police arrested a number of opposition politicians and announced the collapse of a plot. There were many more arrests during the March strike of university students and workers in Quito. On May 8 former President Larrea Alba and 50 associates, including some army officers, were arrested in connection with another alleged conspiracy. On July 10 a number of Leftist politicians were jailed following the abortive revolt of an infantry battalion in Quito. Elaborate military precautions were taken to prevent workers' demonstrations in connection with the opening of Congress early in August.

Foreign Relations. The negotiations for settlement of Ecuador's boundary dispute with Peru, which broke down in 1938 (see 1938 YEAR BOOK, p. 223), remained suspended throughout 1939. In July and September clashes between small patrols of the two countries in disputed territory threatened to inflame public sentiment, but no dangerous crisis developed. Other American governments were understood to be working behind the scenes to secure resumption of the boundary negotiations.

The Quito Government opened negotiations in the United States for a \$20,000,000 loan to be used for road building, but with no success up to the year end. Reports that the Galapagos Islands would be sold to the United States or offered as security for the loan were officially denied. However it was announced August 24 that the government had authorized United States oil experts to survey the islands for petroleum deposits.

The Foreign Minister on May 2 denied the existence of Nazi or Fascist organizations in Ecuador, although the Liberal newspaper *El Día* charged that Germans in the country were conducting propaganda among Ecuadoreans as well as among their own nationals. The Italian military mission returned home upon the outbreak of the European war, but Col. Ricardi di Belfiore arrived in Quito in mid-November to carry on its work. The Ecuadorean Government had expressed its willingness to receive a United States mission if a suitable "offer" was made. Late in January there were hostile demonstrations by Leftists

against crews of two Italian cruisers which paid a good-will visit to Salinas, Guayaquil, and Quito. An army commission appointed to investigate purchases of arms from Italy by the previous governments reported in July that the material acquired was secondhand and virtually useless.

EDUCATION. Reports from many of the countries of the world give unmistakable evidence of great expansion of the concept of education. Schools are no longer thought of merely as institutions where courses in the language arts, mathematics, and the abstract sciences are taught. They are centers in which national ideals are inculcated in future citizens, where health and ability to work are cultivated, where the skills necessary to economic productivity are developed in youths and also in the adult population. The development of political, social, industrial, and agricultural intelligence is recognized as never before in the history of nations as the function of education.

The far-reaching reforms in the intellectual life of Turkey which were inaugurated after the first World War have gone forward rapidly. A pronouncement by the Republican Party of the People, the only party in the country, contains among others the following statements. "The cornerstone of our cultural policy is the suppression of ignorance. . . . To respect, and make others respect, the Turkish State must be taught as a duty to which everyone must be very sensitive. . . . The method followed in education and instruction is to render learning an instrument in the hands of citizens for guaranteeing success in material life. . . . We are convinced that it is important to treat the students in all institutions in such a way as not to destroy their initiative. On the other hand, it is important to accustom them to serious discipline and order."

From Mexico come reports that the six-year plan to inculcate socialistic ideals is making effective progress. The purpose of this plan as indicated by the official pronouncement is as follows: "The primary school is a social institution and, as such, its teachings and the conditions to be fulfilled by teachers in order to comply with the social function must be those set by the state as the genuine and direct representative of the whole people."

Rumania has recognized the necessity of improving the life in its villages. It has today twenty-six hundred "cultural homes," or organizations of teachers, ministers, state officials, and representatives of the peasantry. These cultural homes are centers for the care of public health, the organization of labor—technical and co-operative—and the improvement of moral and intellectual life.

Italy is in process of a complete reorganization of its educational system. The Grand Council of Fascism issued early in 1939 a charter of the school (*La Carta della Scuola*) which formulated a new educational system. After the manner of Fascism the new system will be worked out in detail by committees of the government and will be put into effect as soon as plans and materials of instruction are ready, probably in the autumn of 1940.

Children are to enter school at four years of age, earlier than under the present system. After two years in a Maternal School they pass into an Elementary School made up of three classes each requiring a year for its completion. At nine years of age a child enters what is called a "School of

Labor." The School of Labor is a substitute for the earlier so-called *corso superiore*, or upper grades of the Elementary School. The curriculum will be more practical, less literary, than it is now.

After the School of Labor there is a Middle School of three years in length. There are branches of this school, known as the Artisan School and the Vocational School, which prepare pupils for employment in specific trades. Other divisions of the Middle School lead into specialized professional schools. The extent to which specialization has been carried is indicated by the fact that there are at the upper, or university, level institutes of agriculture, industry, and teaching; lyceums for classical and scientific study; a Nautical Institute; and an Institute for Geometricians.

This new plan for the schools is supplemented by military training, which begins at the elementary-school level. Military training is the approved form of physical education. It is justified on the double ground that it prepares for service in the army and is more economical than classes in expensive gymnasiums.

The new Italian plan, though somewhat extreme, is in principle typical of the educational programs that are being developed all over Europe. Training for labor is provided by numerous new technical schools in such countries as England and Russia. Apprenticeship with educational training is fully developed in France. Work camps compulsory even for those who are entering the professions have been organized in Germany and in the central European countries that have come under the influence of Germany. In all these countries the care of children's health is made a subject of the most solicitous attention.

A report recently compiled by the League of Nations on the basis of statistics received from many nations shows that very generally educational budgets of 1939 were higher than those of 1938. Even countries which have been backward in providing education for their people are opening new schools. Afghanistan, for example, is organizing elementary education on a far greater scale than ever before in its history.

The expanding concept of education in foreign countries which is evidenced by such facts as have been reviewed is not unfamiliar to the citizens of the United States. For some years past the schools of this country have been taking on new functions—functions of promoting health and safety; functions of vocational training, vocational guidance, and occupational placement; functions of more intensive preparation for citizenship. The expansion of the educational system has been forced on this country in some measure—it may properly be said in very large measure—by the fact that youth has in recent years been steadily excluded from opportunities to enter gainful occupations. There has developed a youth problem with which the United States, in spite of its great expansion of education, does not seem to be able to cope. More emphatically than ever before in the history of this country the care of youth has become a grave national problem.

The Federal Government, which has no direct control of education because the Constitution leaves education to the States, has been obliged to take action with regard to young people who are unemployed. In 1933 the Civilian Conservation Corps (q.v.) was organized to give employment to boys, and in 1935 the National Youth Adminis-

tration (q.v.) was created to provide work for many needy young people not taken care of by the camps set up in 1933 by the Civilian Conservation Corps. Steadily, as the years have passed, the conviction has gained ground that young people cannot be brought together in camps or on work projects merely for the purpose of providing them with jobs. They must always have training which will contribute to their personal and social improvement. The Smith-Hughes Law, which inaugurated in 1917 a national program of vocational education, contains a phrase which is applicable to all efforts which are made in schools and in Federal and social agencies devoted to the upbringing of youths. The Smith-Hughes Law describes the continuation courses for which it provides as designed to improve "the vocational and civic intelligence" of learners.

Though the Federal agencies mentioned were organized outside the school system, they are increasingly finding ways of relating their activities to those of the schools. People are realizing that a young person who is unemployed and seeking work is quite as much a responsibility—indeed, is as serious a liability—of the local community as he is of the country as a whole. Because of the growing realization of this fact, local boards of education are opening school opportunities to enrollees of the Federal agencies. Teachers are becoming convinced that the traditional courses offered in schools are not appropriate for many youths, and they are adapting their instructional materials to the vocational and civic needs of the pupils who come to them. Co-operation of the type which is developing has had two consequences of great importance. First, it has emphasized the necessity of increasing the facilities of the country for inducting young people into adulthood. Education in the traditional sense is not broad enough to meet the needs of young people. There must be provision for a new and enlarged program of care of youth. Second, there is a growing awareness of the fact that the care of youth is a national problem. It is no longer possible for the family to secure opportunities of self-support for its children and no longer possible for a young person to shift for himself. There are indications that the time is ripe for a recanvassing of the means for adjusting young people to present-day conditions.

The Federal agency which in the past has been most directly related to the educational system is the Office of Education (q.v.). Established in 1868, this office was until 1939 a division of the Department of the Interior. It has always had to carry on its functions with meager appropriations. It has operated as a kind of service agency for school teachers and administrators; it has never had any large influence as a national center of leadership for the people of the United States in their thinking about youths and the care of youths. Schools in this country have always been, partly as a result of the limited powers of the U.S. Office of Education, very little in the national consciousness. American education has never had the prominence in political and social policy that the problems of youth have had in the older civilizations of Europe.

Another Federal agency of great importance for the protection and care of young people is the Public Health Service (q.v.). This was located by historical accident in the Treasury Department. Still another agency important to young people is the U.S. Employment Service (q.v.),

which was until 1939 located in the Department of Labor.

When the emergency agencies mentioned earlier were organized at the beginning of the depression to deal with young people, it was evident that the schools, the Public Health Service, and various employment agencies acting separately could not cope with the problems of youth that confronted the nation.

The President of the United States persuaded the Congress in June, 1939, to bring together the Federal agencies that are directly related to the care of young people. They are now united under a single administrative head, the Administrator of the Federal Security Agency (q.v.). The political reorganization thus effected supplies a basis for the more adequate organization of the educational system of the United States. How rapidly a new organization can act will depend on the extent to which this nation realizes, as the nations of Europe have long realized, the importance of properly providing for the health, intelligence, and vocational competency of future citizens.

On the basis of a memorandum of agreement adopted in October, 1939, by the Office of Education and the National Youth Administration, an experimental program has been projected in which enrollees of the National Youth Administration receiving work opportunities and experiences on projects organized by the latter agency are to be taken into schools for related training under the provisions made in the vocational-education law for continuation classes. This memorandum of agreement points out that the traditional literary-mathematical curriculum of the secondary school is preprofessional and therefore appropriate only for a minority of pupils. The vocational courses offered by secondary schools in their regular program are quite as specialized as the traditional courses; they prepare for the higher forms of skill in specific trades and in certain limited branches of agriculture. What is needed in this country is unspecialized education for the great majority of secondary-school pupils. Furthermore, it is essential that provision be made for financial compensation of young people in payment for productive labor if they are to be given the means of establishing themselves at the period in life when they should become independent, self-supporting individuals. In short, what is necessary in this country is a program for the solution of the problems of youth that shall be far broader than the program which has up to this time been included under the concept of education.

In complete accord with the steps described in preceding paragraphs as taken by the Federal Government are measures recommended by the Advisory Committee on Education set up by executive order of the President of the United States. This committee included in its membership representatives of industry, agriculture, labor, and education. It had its origin in the fact that the President was not at all convinced of the wisdom under existing conditions of an appropriation for vocational education made by the Congress in 1937. The committee made extended studies of all phases of education and recommended in the interests of equalization of educational opportunities Federal financial aid to the States, especially to those least competent to support adequate schools. A bill was introduced in Congress in the early months of 1939 based on the recommendations of the Advisory Committee, but

it did not reach the stage of serious consideration. The demand for Federal aid to schools has been presented before by the National Education Association and other educational and welfare organizations. It has frequently been pointed out that certain States, such as those in the southeastern part of the country, have higher percentages of children and lower rates of income than other States and consequently are unable to meet the costs of maintaining schools. Sooner or later the evidence of inadequacy of educational opportunities in many States will undoubtedly secure attention and remedial measures will be adopted.

The movements for broadening the scope of education which are going on in the Federal Government are being reinforced by activities of numerous nongovernmental organizations. The American Youth Commission of the American Council on Education published a pamphlet, entitled "A Program of Action for American Youth," which has received wide attention. This Program of Action calls for employment and publicly provided medical services for every young person. It also advocates changes in the organization of the units of school administration in order to secure greater efficiency.

The Educational Policies Commission of the National Education Association has adopted a program of education for democracy and is aggressively urging school systems to introduce courses dealing with civic and social problems and to organize plans of self-government among pupils which will make them aware of the character and meaning of democratic institutions and democratic modes of life.

Teachers College of Columbia University conducted during the past summer a conference on democratic education. To this conference it invited employers and representatives of labor, of welfare organizations, and of education. In small groups around conference tables these individuals drawn from different interests attempted to arrive at agreements with regard to the best methods of teaching and the best contents of instruction which can be employed in order to make young people conscious of the problems of the present era and of the obligations and privileges of citizenship in a nation such as this.

The National Education Association and the Progressive Education Association have organized a joint commission which has as its purpose the preparation of new materials of instruction based on the programs of investigation carried on by State, regional, and national planning bodies. Most of the States have organized boards which make long-term plans with regard to the conservation and utilization of the physical and human resources within their territories. These boards collect information on such topics as water and forest resources, land utilization, community organization, and the population of their areas. Obviously, the information thus brought together and the plans formulated by the planning boards constitute the most stimulating kind of instructional materials for schools. The formal courses in geography and history which have long been taught in the schools, including in the main discussions of lands and peoples far from the homes and opportunities of observation of pupils, will certainly be greatly enlivened by the introduction of instructional materials drawn from the regions surrounding the schools.

The commission organized to promote the study of regional resources and regional planning is to

conduct during the coming summer two centers of research and dissemination of knowledge in parts of the country where extensive studies have been made by planning agencies. One of these centers is in the extreme northwestern part of the United States, one in the southeast. At the University of Washington and at the University of North Carolina groups of teachers and experts on planning will be assembled and will be encouraged to work intensively on methods of gathering and arranging for classroom use the type of information for the collection of which the commission was organized.

A joint commission appointed by the regional standardizing associations of colleges and secondary schools to improve methods of classifying secondary schools brought to completion during 1939 the work on which it has been engaged for the past five years. This commission made a study of secondary schools similar to that made by the North Central Association of Colleges and Secondary Schools of the colleges on its approved list. The purpose of the earlier study and of the present was to find, if possible, a substitute for the rigid standards that had developed within the standardizing association as the means of accepting or rejecting institutions for admission to approved lists. The plan finally adopted at the end of both studies is to compare any given institution in a number of selected characteristics with the average of institutions of its kind. If the institution under consideration falls short in one characteristic but compensates for this particular deficiency by standing well in other characteristics, it may be approved on the basis of its total showing. No fixed and arbitrary adherence to any particular standard is insisted upon, but general conformity to good practice as determined by examination of many institutions is the criterion of approval.

While activities of the type thus far described have been going on in public schools, colleges have been engaged in discussions of their work and have here and there undertaken to broaden their programs. The American Council on Education at its annual meeting in May, 1939, staged a discussion of general education in the course of which criticisms were made of the conventional courses in liberal-arts colleges on the ground that these courses are not suitable for the ordinary student because they are unrelated to modern life and because the methods of instruction and the examination requirements of these courses fail to cultivate powers of independent thinking. A similar discussion took place in November at the meeting of the Middle States Association of Colleges and Secondary Schools. On this latter occasion the president of St. John's College took the opportunity of describing in detail the program adopted by his institution in conformity with the plans suggested by President Robert M. Hutchins of the University of Chicago.

President Hutchins, as is generally known, advocates the reading of one hundred of the greatest books of all ages and all countries. These books, he holds, are the basic materials of general education. In correlation with the reading of the books there is to be discussion of current advances in science and in public policies, and there are to be laboratory and practical exercises designed to cultivate individual skills and initiative on the part of learners.

Perhaps the most discussed article on college and university administration that appeared dur-

ing the year is President Hutchins' article in the *Saturday Evening Post* in which he points out the untenableness of the theory formerly widely held that endowments are the only safeguards of administrative stability in institutions of higher education. The predicament in which endowed colleges and universities find themselves at the present time, when mortgages have depreciated and when interest rates on all kinds of securities have reached an all-time low level, is vividly described in this article, and the case is clearly made that dependence on endowments is no longer a safe policy. Furthermore, as President Hutchins indicates in his article, the probability that there will in the future be large contributions to college and university endowments by rich patrons is diminishing rather than increasing.

The pessimistic view with regard to assured financial stability through endowments is compensated for in some measure by the optimistic outlook for institutions that emphasize high quality of instruction. Only those institutions will be able to survive which can appeal to students as supplying the highest type of educational opportunity.

As one looks to the future it is easy to see the areas in which changes in the educational program of the country are sure to come. Unemployment of young people has been in no small measure covered up for the past thirty years by the fact that free education at the secondary level has been open to all comers. In spite of the growth of the secondary-school population, unemployment of young people has steadily increased. Furthermore, the taxpaying public has organized a vigorous campaign to reduce expenditures for secondary schools, and criticisms are heard from many sources of the curriculums of schools on the ground that they do not prepare graduates for the kinds of careers on which they will certainly have to enter under present social and economic conditions. One cynic remarked that it was a mistake to expand secondary schools because, if they had not been available to absorb the youth of the country, the American people would long ago have been forced to adopt measures for the correction of the intolerable conditions which now confront youth.

The optimistic rather than cynical prophet is likely to foretell an awakening of the secondary schools to the necessity of reorganizing their programs. A study recently made by a committee of the Department of Secondary School Principals of the National Education Association showed that the greatest need which secondary-school principals see is for a new program of instruction for what they call "nonacademic pupils." Nonacademic pupils are a large majority of the six and a half million pupils now enrolled in secondary schools. There can be no doubt that the first and most urgent demand that they have in mind is for jobs and wages that will make them self-supporting. The training which they ask for is such as will make them employable, such as will be of interest to the ordinary boy or girl who is going to be throughout life a semiskilled worker in industry or agriculture. Pupils are quite as critical as older people of the preprofessional education and of the training for unit trades to which secondary schools now devote all their energy. The future will certainly see more attention to general education and to some kind of work program for adolescents.

At the higher level of American education

preparations are now being made to take over the responsibilities for the protection and promotion of scholarship in a world that is largely engaged in the destruction of cultural materials and cultural institutions. Libraries and institutions of higher education are consolidating their resources and planning for a future in which, as seems inevitable, the essentials of civilization will have to be conserved in the Western Hemisphere. The State Department through its Division of Cultural Relations held during the closing months of 1939 a series of conferences in which representatives of all the American republics discussed and arranged plans for concerted action to promote and expand cultural developments on the North and South American continents.

Statistical information is to be found in the articles on SCHOOLS, ELEMENTARY AND SECONDARY; UNIVERSITIES AND COLLEGES; and in the sections on *Education* under the various States and countries. See also PHOTOGRAPHY; PSYCHOLOGY; RADIO PROGRAMS; and the agencies and associations referred to above.

CHARLES H. JUDD.

EDUCATION, AMERICAN COUNCIL ON. A council composed of national educational associations; organizations having related interests; approved universities, colleges, technical schools, state departments of education, and city school systems. It now has more than 475 members.

Since its establishment in 1918, the Council has served as a center of co-operation and co-ordination which devotes itself to scientific inquiry, to the provision of means for consultation, and to stimulation of experimental activities by institutions and organizations. The Council operates through numerous standing committees concerned with various aspects of education and, in addition, has secured financial support from philanthropic foundations for research and service programmes. These include the American Youth Commission which is carrying on an extended study of problems facing young people between the ages of 16 and 25; the Commission on Teacher Education, a co-operative attack on the recruitment, training, selection, and in-service development of teachers; the Co-operative Test Service, which prepares and distributes achievement tests to schools and colleges; the Co-operative Study of General Education, in which 22 colleges have joined for a study of their problems; and the Financial Advisory Service, which consults with institutions of higher education on their financial and business operation. The Council publishes *The Educational Record*, a quarterly journal, various books, and a series of *Studies* growing out of its work.

The operating budget of the Council for 1939-40 is approximately \$106,000 and additional funds for special projects for 1939-40 total approximately \$830,000. George F. Zook is president; C. S. Marsh is vice president; and Mark A. May, Yale University, is chairman for 1939-40. Headquarters are at 744 Jackson Place, Washington, D. C. See EDUCATION.

EDUCATION, OFFICE OF. The U. S. Office of Education is the long-established agency in the United States which represents the Federal Government in educational matters. Its wide range of services are rendered through: Research, field surveys, conferences, work with organizations and committees, advisory services, public addresses, administering educational pro-

grams, financial assistance, demonstrations, information, library services, et cetera.

During the year 1939, through the President's Reorganization Plan, the Office of Education was transferred from the Department of the Interior to the newly created Federal Security Agency. The President's plan also affected the Office by transferring to it the Radio and Motion Picture Divisions of the National Emergency Council.

During the year the Office of Education undertook extensive studies of the organization and functioning of State programs of education. The reports will present a comprehensive view of the ways in which States are organized to provide education for their citizens.

Forum demonstrations were continued during the 1938-39 season in some of the smaller communities of the country. These co-operative demonstration centers, as they were called, each served a number of communities. Federal funds were allocated to the Office for assistance in this work. The co-operative plan sought to demonstrate a practical means by which a forum leader may be shared by several school districts. Since the beginning of the demonstrations more than 500 communities in 40 States have participated in the Federal forum program.

Radio activities of the Office have continued to be emphasized through demonstration and service in educational broadcasting with an attendant interest in radio education by schools and colleges, civic groups and mass audiences generally. Several weekly programs of the Office have been regularly broadcast over the network systems.

The Script Exchange, the "clearing house" for scripts, recordings, production aids and other information has served widely during the year. Upon requests from schools, colleges and other interested noncommercial groups, it distributed during the year 72,000 copies of scripts, bringing the grand total to 250,000 copies since the service was inaugurated. The Exchange has issued a catalog and supplements listing more than 500 available scripts and has assembled a reference library consisting of approximately 2000 scripts.

There was considerable expansion in the Vocational Division during the year. This included the development of Occupational Information and Guidance Service; consultant services in the fields of public service training, employee-employer relations, and curriculum problems. The Business Education Service was established, replacing the former Commercial Education Service. Various advisory committees have been organized to assist in many fields.

More than 10,000 disabled persons were rehabilitated—that is, restored physically where possible, trained where necessary, and placed in remunerative employment—during the year, through services of the Rehabilitation Division. There was particularly marked growth in services for the blind.

Nearly 250,000 enrollees regularly attended organized classes and activities in the CCC camps. This represented 91.5 per cent of the total enrollees. Nearly 8500 illiterate enrollees were taught to read and write. The Office of Education has the general responsibility for developing the educational work in the CCC camps.

In order to show the National status of education, the Office of Education has continued to

collect, compile and publish statistical data in many fields of public and private education. The Office published 70 new bulletins, covering a wide range of research. It issued *School Life*, official journal of the Office; the Annual Educational Directory; and it presented exhibits of educational activities at many national conventions. More than 903,000 copies of publications were distributed during the year. See EDUCATION.

J. W. STUDEBAKER.

EDUCATION ASSOCIATION OF THE UNITED STATES, NATIONAL. An organization of approximately 200,000 persons actively engaged in educational work or interested in the promotion of education. Its purpose is to "advance the interests of the teaching profession, promote the welfare of children, and foster the education of all the people." The Association was organized in Philadelphia in 1857 and incorporated by an act of Congress in 1906. *The Journal of the National Education Association* is the official monthly publication. Various branches of education are represented in the Association by 27 departments. As a continuation of the Horace Mann Centennial celebration, the Association is sponsoring Future Teachers of America, a rapidly growing organization which serves youth in high schools and colleges. See EDUCATION.

A most important activity of the Association is the work of the Educational Policies Commission which has issued the following publications: *The Unique Function of Education in American Democracy* (1937); *The Structure and Administration of Education in American Democracy* (1938); *The Purposes of Education in American Democracy* (1938); *The Effect of Population Changes on American Education* (1938); *A National Organization for Education* (1937); *Social Services and the Schools* (1939).

The seventy-seventh annual convention of the Association was held in San Francisco July 2-6, 1939, around the general theme "Responsibilities of Our Profession." Groups admitted to the Association as departments at San Francisco are: School Garden Association of America, National Association of Journalism Directors, and National Association of Teachers of Speech. The winter convention under the direction of the American Association of School Administrators was held at Cleveland, Ohio, Feb. 25-Mar. 2, 1939. The subject of the yearbook prepared for discussion at this meeting was *Schools in Small Communities*.

The officers of the NEA for 1939-40 are: President, Amy H. Hinrichs, New Orleans, La.; executive secretary, Willard E. Givens, Washington, D. C.; secretary emeritus, J. W. Crabtree, Washington, D. C.; and treasurer, B. F. Stanton, Alliance, Ohio. Headquarters are at 1201 Sixteenth Street, N. W., Washington, D. C.

EDUCATION BY RADIO, NATIONAL COMMITTEE ON. This Committee, appointed by the U.S. Commissioner of Education (see NEW INTERNATIONAL YEAR BOOK for 1934, p. 609), is the official representative of the nine important national educational associations which constitute its membership. It acts as a spokesman in radio for organized education. It assists in protecting the privileges of educational broadcasting stations, promoting broadcasting to schools, and stimulating the improvement of the public broadcasting service.

The Committee's activities include publishing

the periodical—*Education by Radio*. The Committee called a national conference on "The Use of Radio as a Cultural Agency in a Democracy." This conference, held on May 7 and 8, 1934, adopted a set of fundamental principles which are basic to the setting up of a sound system of broadcasting. The Committee has encouraged research in education by radio and has promoted and coordinated experiments in the use of radio, both in school and adult education. It has sent representatives to state, national, and international conferences and has furnished speakers for important national civic groups.

At present the Committee is sponsoring the development of a Public Broadcasting Service. The purpose of this Service is to create a working organization through which educational institutions and agencies, service departments, and citizens' groups can mobilize their broadcasting resources, raise the standards of their presentation, and demonstrate a co-operative method of maintaining working relationships between broadcasting stations and the producers of noncommercial programmes. This can be done on local, regional, or national bases.

The chairman of the Committee is Arthur G. Crane, president, University of Wyoming. The vice-chairman is H. J. Umberger, director, division of extension, Kansas State College of Agriculture and Mechanic Arts. The secretary, who administers the Committee's activities, is S. Howard Evans. The offices of the Committee are located at Room 308, 1 Madison Avenue, New York, N. Y.

EDUCATION FOR DEMOCRACY, CONGRESS ON. See DEMOCRACY.

EGGS. See POULTRY.

EGYPT. A kingdom of northeastern Africa. Capital, Cairo. Ruler in 1939, Farouk I, who succeeded to the throne Apr. 28, 1936.

Area and Population. Excluding the Anglo-Egyptian Sudan (q.v.), Egypt has an area of about 386,000 square miles of which only about 13,600 square miles along the Nile are occupied. The estimated population on June 30, 1938, was 16,129,000. Populations of the chief cities at the 1937 census were: Cairo, 1,307,422; Alexandria, 682,101; Port Said, 126,907; Tanta, 94,421; Mansûra, 68,637; Asyût, 59,925; Damanhûr, 61,791.

National Defense. The Egyptian army (August, 1939) was composed of 32,000 active soldiers and 8000 reserves, fully motorized and equipped with British arms. The seven-year defense program started in 1937 called for an Egyptian first-line army of 50,000 men, with 150,000 in reserve. In 1939 the air force comprised 165 aircraft.

Religion and Education. Of the 1927 population, 91 per cent were Moslems, 8.34 per cent Christians, and 0.45 per cent Jews. Arabic is the official language. About 88 per cent of the adult inhabitants were illiterate in 1927. The school attendance in 1937 was 1,308,252.

Production. Agriculture supports about 62 per cent of the population directly. The area devoted to crops and orchards in 1937-38 was 7,809,000 acres. The yields of the chief cereals in 1939-40 were in metric tons: Wheat, 1,333,800; barley, 238,200; corn, 1,570,700 (1938-39); rough rice, 725,200 (1938-39); sugar cane, 162,100 (1938-39); groundnuts, 15,700 (1938-39); cotton, 380,000 (1938-39); and onions, 1,424,386 bu. (1938-39). Livestock statistics for 1937 showed 983,000 cattle; 956,000 buffaloes; 1,919,000 sheep; 1,311,000 goats; 155,000 camels; and 1,142,000 asses.

Mineral production in 1938 was (metric tons): Phosphate rock, 458,404; petroleum, 225,736; manganese iron ore, 153,112; gold, 2162 fine oz. The fishing industry in 1937 employed 52,002 persons and comprised 10,014 boats. Tourists visiting Egypt in the year ending Mar. 31, 1939, numbered 39,702 of whom 10 per cent were Americans.

Foreign Trade. In 1939 imports for consumption were valued at £E34,091,000 (£E36,934,000 in 1938) and exports of Egyptian products at £E34,081,000 (£E29,342,000 in 1938). Respective value in U.S. currency, 1938 and 1937, was \$184,498,000 (\$192,713,000) and \$147,204,000 (\$200,415,000). Chief imports were cotton, fertilizer, coal, coke, briquets, machinery, and other textiles. See IMPORTS AND EXPORTS.

Finance. For the fiscal year ending Apr. 30, 1940, the budget estimates placed receipts at £E40,247,000 and expenditures at £E41,847,000. For 1938-39 actual receipts amounted to £E37,420,610 and expenditures to £E40,393,341. Actual receipts for 1937-38 were £E37,148,111; expenditures, £E36,332,328. The consolidated public debt was £E87,890,140 on Jan. 31, 1939. The £E5,000,000 debt of the Sudan to Egypt will be refunded at the rate of £E500,000 a year, beginning in 1949, according to a plan approved by the Council of Ministers on May 6, 1939. The agreement provided also for the discontinuance of the annual Egyptian grant-in-aid to the Sudan after the current year. Following the devaluation of the pound sterling in 1931, the Egyptian pound (£E) was pegged at approximately 102½ per cent of the pound sterling and fluctuated in constant ratio with the latter currency.

Transportation. In April, 1938, there were 2763 miles of government-owned railway lines (excluding sidings) and 976 miles of private lines. In 1937-38 the government railways carried 36,769,609 passengers and 1,139,537,571 ton-miles of freight. Gross receipts were £E5,146,934. Highways in 1939 extended 5556 miles; automobiles numbered 31,212. A 140-mile asphalt road across the Sinai Desert from Egypt to Palestine was completed in 1939. Cairo is an important aviation center with airlines radiating to South Africa, Europe, and Asia. During 1938, 9974 vessels of 35,390,325 net registered tons entered Egyptian ports, landing 4,727,893 tons of cargo. See SUEZ CANAL.

Government. The Constitution of Apr. 19, 1923, abrogated on Oct. 22, 1930, was restored on Dec. 12, 1935. It provided for a Parliament of two houses—a Senate with 147 members in 1939, two-fifths nominated by the Crown and three-fifths elected by universal male suffrage, half for five and half for 10 years, and a Chamber of Deputies with 264 members elected for five years. The elections of Mar. 31 and Apr. 2, 1938, for the Chamber of Deputies showed the following results: Liberal Constitutional party, 93; Saadist, 89; Ittehad Esh Shaabi, 19; Wafd, 13; Watani, 3; Independents, 47. Premier at the beginning of 1939, Mohammed Mahmoud Pasha, heading a coalition Liberal Constitutionalist-Saadist cabinet formed June 24, 1938. For changes in 1939, see *History*.

HISTORY

Internal Politics. Premier Mohammed Mahmoud Pasha resigned on Aug. 12, 1939, and a new government was formed on August 18 by Ali Maher Pasha, chief political adviser to King Farouk. Mahmoud Pasha's retirement was attributed mainly to ill health. However he had been under

constant attack by the Wafd (Egyptian Nationalist party), which had lost its long-continued control of the Chamber of Deputies in 1938 (see 1938 YEAR BOOK, p. 226-227). Deprived of its most effective electoral issue by the achievement of Egyptian independence in 1936, the Wafd sought to regain popularity in 1939 by another anti-British campaign. The British were charged with maintaining Mahmoud Pasha in power, violating the Anglo-Egyptian treaty of 1936, involving Egypt in Europe's dissensions, and interfering in the country's domestic affairs. The Wafd party and press also levelled charges of dishonesty against Mahmoud Pasha's government. The Wafd leader, Mustafa Nahas Pasha, was accused early in August of libelling the Minister of Finance, Dr. Ahmed Maher.

The new government formed by Ali Maher Pasha was composed of non-party men and administrative experts with the exception of five Saadists. The Liberal Constitutionalist leaders, whose co-operation was necessary to insure a majority in the Chamber, declined to collaborate without obtaining cabinet representation. Consequently the government faced difficulties in the Chamber when Parliament reconvened. Ali Maher's program called for measures to improve the lot of the fellaheen (peasant) and the working classes and for loyal co-operation with Great Britain under the Anglo-Egyptian treaty of alliance. On August 20 he replaced five under-secretaries and two ranking military officials, naming Aziz Pasha el Masry as chief of staff of the army and Hasan Pasha Abdul Wahab as commander of the air force. The Senate on October 17 approved (68 to 59) the government's request for authority to maintain the state of siege established on September 3, thus freeing Premier Ali Maher of parliamentary control.

Relations with Britain. The European crises of the spring of 1939 brought new proofs of Anglo-Egyptian military co-operation. On April 12 movements of British troops from Palestine to the Western Egyptian desert near the Libyan frontier were carried out. On April 24 Premier Mahmoud Pasha stated in Parliament that "our great ally has given us repeated assurances that she will supply us by land, sea, and air with all the reinforcements capable of rendering the co-operation of our two armies as powerful as all the needs for the defense of our country demand. Egypt, on her part, will discharge as well as possible all the obligations imposed by the alliance." The training of the new Egyptian army by a British mission was intensified (see *National Defense*).

Previous to the outbreak of the European War, 7000 additional British troops arrived in Egypt from India. The same day Britain declared war on Germany (September 3), Egypt severed diplomatic relations with the Reich, declared a state of siege, and placed the country on a war footing. All commercial and financial transactions with the German Government or German nationals, including subscriptions to German loans, were prohibited as from that date. German nationals were taken into custody or sent home and German banks and business houses were closed. Premier Ali Maher declared that "the government as well as every Egyptian are heart and soul with Britain in the great struggle for justice and preservation of liberty and freedom. . . . It is in our own interests as in Britain's to resist the policy of force."

War Measures and Conditions. Before war came, the government imposed an income tax and

a stamp tax to provide funds for increasing defense and other expenditures. After September 1 measures were adopted to prevent hoarding and profiteering, regulate food supplies, and censor the press and communications. The government assumed control of foreign exchange transactions except in sterling, prohibited exports of certain commodities, fixed maximum sales prices of necessities and minimum stock exchange prices. These regulations and war conditions adversely affected Egyptian economic conditions during the remainder of the year. The government was obliged to undertake financial support of cotton prices, a task which was aided by the British Government's agreement in November to purchase 242,900 bales of the current cotton crop.

Other Foreign Relations. In May Marshal Italo Balbo, Italian governor of Libya, paid a four-day visit to Cairo. He received a formal welcome, tempered by the statement of the semi-official newspaper *Balagh* that "as long as Italian troops are massed close to the Egyptian border professions of friendship for Egypt will not be taken seriously."

In June the Egyptian Foreign Minister paid an official visit to Turkey, where the question of Egyptian adhesion to the non-aggression pact between Turkey, Iran, Iraq, and Afghanistan was said to have been discussed. On August 21 the government decided to recognize the Soviet Union to facilitate the formation of an anti-aggression bloc in Europe. However the announcement of the Soviet-German non-aggression pact on the following day annulled this plan. Egypt's relations with Iran were strengthened by the marriage of Princess Fawzia, eldest sister of King Farouk, to the Iranian Crown Prince (see *IRAN* under *History*).

See *ARCHAEOLOGY*; *GREAT BRITAIN* and *PALESTINE* under *History*; *INDUSTRIAL CHEMISTRY*.

EIB. Export-Import Bank of Washington (q.v.).

EIRE. See *IRELAND*.

EKKO PROCESS. See *RUBBER*.

ELECTRICAL ENGINEERS, AMERICAN INSTITUTE OF. A national organization founded in 1884 for the purpose of advancing the theory and practice of electrical engineering and the allied arts and sciences and of maintaining a high professional standing among its members. There are three grades of members: Associate, member, and fellow. The membership on Nov. 1, 1939, was 17,220.

In September, 1939, there were 67 sections of the Institute located in various cities throughout the United States and 121 student branches in colleges giving courses in electrical engineering. In addition to district, section, and student branch meetings, there were held an annual winter convention in New York City, Jan. 23-27, 1939, and an annual summer convention in San Francisco, Cal., June 26-30, 1939. Much of the Institute's work is accomplished through its general and technical committees, of which there were 39 in 1939. Its principal publications are the monthly *Electrical Engineering*, the *Standards* of the A.I.E.E., and the *Year Book*.

The officers elected for 1939-40 were: President, F. M. Farmer; vice presidents, C. T. Sinclair, E. E. George, A. L. Turner, H. W. Hitchcock, J. M. Thomson; directors, Mark Eldredge, R. E. Hellmund, F. J. Meyer; national treasurer, W. I. Slichter; national secretary, H. H. Henline. Five other vice presidents and nine other directors were held over from previous elections. Headquarters are in the Engineering Societies Building, 33 West 39th St., New York City.

ELECTRICAL ILLUMINATION. Perhaps the most significant development of 1939 is the standardized "sealed-beam" headlight unit that is appearing on most 1940 automobiles. This new and effective unit represents three years of co-operative effort on the parts of the automobile industry, the lamp manufacturers, and the American Association of Motor Vehicle Administrators toward the accomplishment of several objectives, including: (1) Safer driving by means of better road lighting, (2) standardization and simplification of parts and of necessary adjustments, (3) universal application and convenient replacement.

Improvements in the new fluorescent lighting described in the 1938 YEAR BOOK include a new white color, a 4-foot lamp unit, improved and simplified auxiliaries, and a rapidly widening variety of fixtures facilitating the use of these lamps for industrial, commercial, and decorative purposes. Some 1800 units installed in a new windowless factory building provide 20 foot-candles of even "daylight" illumination; in another instance 1300 triple-unit luminaires provide 25 foot-candles and have been ingeniously arranged for three-phase operation, thus eliminating any flicker or stroboscopic effect. New germicidal lamps include 3-, 5-, and 15-watt units, the latter being identical with the 15-watt fluorescent lamp except for omission of the fluorescing "phosphor" and the substitution of glass capable of transmitting the ultraviolet radiation of the mercury arc. Germicidal lamps rapidly are finding a wide range of uses for sterilization purposes. A noteworthy application is the use of these lamps in a large meat plant for beef "tenderizing" where they have enabled the period of aging to be reduced from several weeks to a few days. Other developments in mercury lamps include improvements in and commercial and industrial applications of the 1000-watt water-cooled "midget sun" described last year. An adaptation of this capillary type of lamp is a 100-watt mercury lamp highly effective as a "sun lamp." An instrument similar to a photographic exposure meter has been developed to measure ultraviolet radiation.

For both spot and flood use, 300-watt reflector lamps of the same physical size as the 150-watt units mentioned last year have been brought out. A new wire-filled photoflash lamp smaller than a golf ball gives a million-lumen flash, equivalent in brightness to about 40 1000-watt incandescent lamps. A 500-watt photoflood reflector lamp has been brought out. Of nine photoflood lamps for taking color pictures, three are for use with daylight film and six for use with film requiring artificial light.

Improvement in and extension of street and highway lighting continues, with incandescent as well as with sodium luminaires. Falls Street, Niagara Falls, N. Y., with an average of five foot-candles at the pavement, is reported as the current record holder for the United States. New Jersey reports that in its counties where modern highway lighting has been adopted the records show reductions in nighttime motor accidents of 19 per cent, 37 per cent in deaths, 20 per cent in injuries, whereas daytime accidents in the same territory remain about the same. Floodlighting for sports continues, with the major league baseball clubs rapidly going in for night games. Installations completed or arranged for during 1939 include Shibe Park, Philadelphia; Comiskey Park, Chicago; the Cleveland Municipal Stadium, and the Polo Grounds in New York. Illumination

intensities provided range up to 185 foot-candles for infield, 300 for the pitcher's box, and 120 for outfield. The 70-story RCA Building in New York City has been floodlighted. Originally introduced at the 1937 Paris Exposition, the first "Wondersign" made its appearance in the United States, at Times Square in New York City. Comprising some 27,000 vari-colored electric lights and associated control apparatus, and suggestive of a motion picture cartoon, this sign presents an animated printed, written, or drawn display at the rate of 36 different units in a 12-minute period.

The sale of incandescent lamps for 1939 is reported as 540,000,000 large and 430,000,000 miniature lamps, as compared with 485,000,000 and 315,000,000 respectively for 1938 and 515,000,000 and 440,000,000 for 1937. Since 1930 the cost of lamps has gone down nearly 30 per cent and lamp efficiency has been improved by some 18 per cent. The smallest lamp reported is the 0.17-watt "grain of wheat" lamp for surgical purposes—a third of an inch long and weighing 1/7560 lb.; largest, a 50,000-watt lamp 20 inches in diameter and weighing 35 lbs.

G. ROSS HENNINGER.

ELECTRICAL INDUSTRIES. Production in the electrical manufacturing industry as reported for 1939, estimated at about \$2,143,000,000, was some 25 per cent above 1938 and has been exceeded only in 1937 and in 1929. Slow at the beginning of the year and more active during the second half of the year, the general trend was of about the same order as that of general business. Using production for the year 1925 as 100 per cent, statistical reports for 1939 show the Federal Reserve Board general production index for 1939 estimated at 101 as against a final of 82 for 1938; electrical manufacturing production respectively 123 and 97; and employment respectively 89 and 77; population respectively 114 and 113. On the same 1925 basis, some further figures of 1939 estimates and 1938 actuals are: Small appliances respectively 120 and 104, refrigerators 1094 and 769, industrial apparatus 127 and 97, power transmission and distribution equipment 110 and 90, insulated wire and cable 79 and 60, and miscellaneous electrical materials 122 and 83. By the end of 1939 there had been little evidence of any effects in this field from war buying, except perhaps the tendency to increase available stocks of certain raw materials.

Improvements in steel mills and in steel products incidental to further electrification during 1939 are reflected more in the modernization of existing mills than in the erection of new mills. Attention seems to have been concentrated on the finishing stages of steel production, and in particular upon strip mills. Several hot-strip mills built about a decade ago were modernized by adding mill stands, increasing the capacity of driving motors and related equipment, rebuilding run-out tables and other equipment, and by the universal adoption of direct-current mill-type motors arranged for control by means of variable voltage. Every one of the six hot-strip mills built since 1937 has had this latter drive and control equipment. The most conspicuous trend in cold-strip mills, especially those daily turning out miles of "tin plate" (thin continuous steel sheet 3 or 4 ft. wide and used for "tin" cans), is the steady and amazing rise in delivery speed. From about 300 ft. per min. 10 years ago, the output speed of these mills has risen to 1500 ft. per min.

2 years ago, to 2000 ft. per min. in 1939, and to some 2500 ft. per min. for mills now projected or under construction and for which driving motors of from 2500 to 3000 h.p. are expected to be used. Refinements reported include more accurate automatic tension and thickness control; the use of electrostatic cleaners for the cooling air required for large steel mill motors; and the application of an electronic device for the rapid, accurate, and automatic count of steel sheets as they come from the sorting tables. A new direct-connected "drag-generator" (a machine to provide a braking effort for the control of finished strip being passed through a tempering mill) installed during 1939 has bearings and shaft large enough to carry a 12-ton coil of strip and to withstand the cone-thrust of 50 tons at 600 r.p.m. Mercury-arc rectifiers are expected by 1940 to make their entry into steel-mill power-supply service in competition with the traditional motor-generator set. A new slabbing mill makes use of two 5000-h.p. 700-volt motors, each directly connected to roll, thus eliminating gearing; related edging rolls are driven by a 2000-h.p. 700-volt motor and for simplification of control are locatable about 30 ft. from instead of immediately adjacent to the main rolls.

Electric welding is assuming an ever more important place in industry. The articles fabricated by this process literally range from household ornaments to office buildings, from toys to gigantic machines and the stainless steel trains that are revolutionizing American rail transportation. Some of the years' advances will be mentioned briefly. Direct-current arc-welding units of 200 and 300 amperes capacity, powered by 4-cylinder Diesel engines were introduced during the year, the smaller unit weighing some 1200 lb. For these units economic operating advantages are claimed where they will operate 2000 hours or more per year. The increase in the use of alternating current for arc welding during the year has been one of the notable trends. A typical heavy-duty industrial a-c welding installation provides currents ranging from 200 to 4800 amperes. Also, special types of transformers featuring close control and adjustment of current have been announced in 100-, 150-, and 200-ampere capacities. Special equipment announced for resistance welding includes series capacitors for control of power factor, improvement of electronic devices for accurate automatic timing and control of spot- or seam-welds, and improved special equipment for resistance brazing by means of incandescent carbon electrodes held in contact with the work by special tongs. An automatic device combining recording instrument, alarm signal, and lockout control, provides a vital safety check on the adequacy of spot-welds on structures such as aircraft and railroad cars where undetected faulty welding might cause disastrous failures. Portable X-ray equipment for the visual (photographic) examination of welded joints continues to be improved in effectiveness and extended in application.

X-ray equipment continued to be developed and improved for an ever-widening application to medical and industrial uses. A million-volt therapy apparatus was installed in a New York City hospital for the treatment of cancer and allied diseases. Unique design features of this equipment enable necessary compactness and saved some six tons in weight as compared with other designs. Two similar units were under construc-

tion at the year-end. Also included in the installation noted are five 250,000-volt X-ray units for more general use and a portable unit operating at from 60,000 to 140,000 volts that is used for bedside treatments. Smaller portable units are finding wider uses in the hands of doctors, both in their offices and at patients' homes. A new diagnostic photo-X-ray equipment reduces the cost to the patient of this valuable medium in the fight against tuberculosis. Shock-proofing and safety features are being improved. A new electrosurgical instrument having a self-compensating spark gap has been announced. A new device enables up to eight people through the medium of Polaroid glasses simultaneously to view three-dimensional stereoscopic views of broken bones or other internal human parts. Equipment for industrial uses includes (1) improved equipment for X-ray diffraction methods to facilitate precision analyses for research and control purposes, (2) improved portable equipment for photo-inspection of welded joints, (3) a new equipment for visually examining automobile tires to detect flaws or foreign objects without removing the tires from the rims, and (4) equipment for the continuous visual examination of electric power cable simultaneously in two planes as the cable leaves the insulating machines.

For the printing industry a new photoelectric system of color-registry control tried out on a high-speed Gravure press shows great promise of improving the quality of the printed product and reducing expensive spoilage arising from inaccurate registry of successive colors.

Among noteworthy developments in the paper industry are: (1) A simplified electric auxiliary helper drive for equalizing the tension in the upper and lower felts of paper-making machines, thus greatly reducing the likelihood of breakage in the paper sheet during the formative stage; (2) two 500-h.p. electric drives for exceptionally large (194-inch, 2000-ft. per min.) super-calenders designed to operate at nip pressures up to 3000 lb. per lineal inch; (3) a new 214-inch 1500-ft.-per-min. sectional paper machine utilizing 33 motors in its 13 sections and a total of 24 additional motors in the related 6-section dryer; (4) two new pulp grinders establishing a record for size by utilizing 4000-h.p. synchronous motors.

In the textile industry, the further application of electronic control devices includes the automatic correction and removal of bow, as well as skew, from cloth as it passes through one of its finishing stages. Turbine-electric drive, long established elsewhere, was applied to printing in the textile industry during the year to facilitate quick changes in speed by direct push-button control. Other developments include application of direct-current braking to a large loom incidental to individual motor drive, replacing heavy hand-operated clutches by push-button controls.

For rapid and closely controllable localized heating for melting or treating metals, industry is making more and more use of electric energy at frequencies ranging roughly from 1000 or less to 100,000 or more cycles per second.

The petroleum industry has witnessed what is reported as the first installation of carrier-current equipment for the remote control of oil-well pump motors, some 400 of which may be started from the power house from which radiate the electric power lines serving the motors. General developments and refinements in explosion-proof circuit breakers, motors, and control equipment have

kept pace with the industry's ever-growing demands. An electrical device records automatically the strain on pump lift-rods, an important matter with deep wells.

A large meat distributor now is able to "tenderize" beef by hanging it for only two or three days instead of from four to eight weeks as heretofore. A rubber company has announced and demonstrated a new process for electroforming heavy deposits of iron against a plastic or other convenient pattern. Developed for the direct production of a tire mold from a pattern, the process undoubtedly will find many commercial applications. Super-high-speed motion pictures have been used for the visual study of machine parts in operation. An ingenious optical system is being built into a 10,000-kilowatt experimental turbine-generator to enable vibrations in the turbine blades to be studied while the machine is operating under steam pressures up to 1250 lb. per square inch. A special wind-tunnel is being used for efficiency studies of steam-turbine blading. A special camera and necessary related equipment enables pictures to be taken at selected intervals at about $\frac{1}{5000}$ second for the purpose of studying visually the effects of rapidly moving (200 ft. per sec.) fluids on the extinction of electric arcs, and a new camera for similar studies is expected to make pictures at the rate of 120,000 per sec. A tiny electric steam boiler about the size of a radio tube is capable of delivering superheated steam within some 15 seconds. Such are but selected examples of the many products and processes that have come out of the research laboratories where glareless glass, new magnetic and other alloys, new studies of lightning, and countless other subjects are under study.

G. ROSS HENNINGER.

ELECTRICAL MACHINERY. One of the principal features of the year in steam-electric turbine generating equipment is the fact that hydrogen cooling—reported in previous YEAR BOOKS—has become within little more than two years almost a standard practice, especially for machines of 25,000-kilowatt capacity or larger. Well more than a million kw of capacity in such generators was in service by the end of the year. Although there was a notable lull in application of large-capacity high-pressure superposed turbine-generator units during the year as compared to recent years, a 60,000-kw, 3600-r.p.m. superposed turbine-generator was placed in operation during the year, and another was being assembled as the year closed. Also, manufacture was started on what will be the largest such unit, an 81,500-kilovolt-ampere 3600-r.p.m. unit for installation in 1940. Of special significance with respect to 3600-r.p.m. machines is a recently perfected system of semi-flexible mounting for the stators that is expected to reduce greatly both vibration and consequent noise. An interesting job reported during the year was the complete rebuilding of a 160,000-kw cross-compound turbine-generator of foreign manufacture and its conversion into a typical impulse-turbine unit. For all but the larger power stations, there seems to be a trend toward 35,000-kw, 3600-r.p.m. hydrogen-cooled turbine-generator units as something of a standard. A third 110,000-kw vertical-compound turbine-generator unit was placed in service in an automotive plant where the first such unit, installed in 1931, was reported to have had the enviable record of being available for service more than 99½ per

cent of the time during the eight years. Small turbine-generators—up to 7500-kw in capacity—continued a previous trend toward higher steam pressures (1000–1400 lb.) and temperatures (750–900 degrees F.). A total of about 1½ million kw of capacity in steam-electric generating equipment was reported as under construction at the close of the year.

Hydroelectric generators continued to make news during 1939. At Boulder (Hoover) Dam, the 7th and 8th 82,500-kw machines were placed in service and work was started on the next two (ultimate, 15). One of the 1939 machines is reported to have set a new world's record output for a single water-wheel generator—more than 2,000,000 kw-hr in a day, the equivalent of 24-hour operation at nearly 104 per cent of its rated capacity. Next largest units mentioned were four 75,000-kv-a generating units for the new Shasta plant of the U.S. Bureau of Reclamation in California. The first of the three 70,000-kv-a machines previously reported under construction began its journey half-way around the world to Manchoukuo. Also, the 64,000-kv-a unit for the Hiwassee plant of the TVA was installed. The second of three years work was reported on the three 108,000-kw machines for the Government's Grand Coulee Project, and construction was started on four 60,000-kv-a units for the Bonneville project. In short, a total of about a million kw in capacity of hydroelectric generating equipment was reported to be under construction at the close of the year.

Four single-phase autotransformers were installed in Los Angeles to receive power from Boulder Dam at 275,000 volts and deliver it at 138,000 volts. These units are rated at 65,000-kv-a capacity, and have set new records for physical size, each being 37 feet tall to the tops of the bushings and occupying ground space 24 by 12½ ft. Two large 115,000/13,200-volt 3-phase power transformers installed in central New York State have a 50,000-kv-a rating self cooled, and 66,667-kv-a with automatically controlled air-pressure cooling apparatus in operation. Improvements in available materials and refinements in design have notably reduced the physical size of distribution transformers for given ratings. Standardization is being attained in network transformers. A small (0.6-kv-a, 7200/100 volts) low-cost distribution transformer developed for the Government's rural electrification projects in the South in effect is built right in its own porcelain terminal bushing, eliminating the metal tank.

Switchgear developments for 1939 were notable in many ways. A "largest" record was set by the newest circuit breakers built for installation at Boulder (Hoover) Dam powerhouse—impulse-type breakers having an interrupting capacity of 3,500,000 kv-a at 287,000 volts. Because of the relatively small quantity of insulating oil required for these circuit breakers, they have come to be known as one of the "oil-poor" types rapidly gaining favor in the United States. A further development announced during 1939 has been the improvement of completely oilless circuit breakers to accommodate them to the relatively heavier service duties that heretofore have been regarded as the logical field of the customary oil-circuit breaker. Significant, is the announcement of the United States manufacturers that they are ready to build air-blast circuit breakers of interrupting capacities of 1½ million kv-a or more as soon as American utilities want to install them. Trial in-

installations have given encouraging results. Breakers of this general class have for years been used in Europe where the operating duties required of them are much less rigorous than prevalent in the United States with its much greater concentrations of electric power. It is only the recent improvements developed in the United States that have adapted these equipments to successful American use. Improvements in oil-circuit breakers of conventional types in general have increased their interrupting capacities for given sizes. Also, improvements in breakers using in one form or another the magnetic method of expediting arc-extinction have contributed effectively to increases in interrupting capacities for breakers of given physical sizes, for both power-system and industrial applications. "Dead-front" safety metal-enclosed switchboards have been further improved and extended for industrial applications and are penetrating the marine field for shipboard use. Explosion-proof equipment for oil fields, chemical plants, and other hazardous industrial applications continue to reflect important improvements and wider use.

New applications of ground-fault neutralizers ("Petersen Coils") for electric power-transmission lines have brought the total of such protective devices to 38, and set a size-record in the 230,000-volt units built for a third transmission line from Boulder Dam to southern California. A new relay for directional over-current ground protection of electric power lines obviates the expensive instrument transformers normally required for such protective equipment. Another new protective relay simplifies and extends the economic range of the use of pilot-wire systems. "Plug-in" connections, such as recently were adapted for wide use with electric meters, now are being used for protective relays to facilitate quick removal for service or replacement. Another new relay enables quicker and more dependable isolation of a power-station bus in the event of internal troubles. Improvements in equipment are exemplified in the employment of a single carrier-current signal channel for four different functions between a small hydroelectric power station and its related control station at a distant point: (1) telemetering or remote metering, (2) supervisory control of equipment by means of coded impulses, (3) operation of protective relays, and (4) voice communication. Extension in the use of electrostatic capacitors is exemplified by the application of a group of three 450-kv-a 4000-volt units to effect automatic control of line voltage on an electric power distribution circuit. Improved materials have contributed to refinements in and longer life for watt-hour meters and other similar devices. An application indicating the refinements in and growing use of electric gauges for precision measurements and process controls is the use of an electric pressure-gauge to measure the cycles of steam pressure in the cylinder of a locomotive traveling 100 miles per hour.

A new dynamo-electric amplifier—essentially a motor-driven compensated generator having a set of brushes for each set of poles—constitutes an effective industrial control device. It gives a high amplification of direct-current input. Typical applications include service as control-exciter for critical steel-mill, paper-mill, and textile-mill driving motors. The range of sizes of small induction motors using cast rotors and oblique slots has been extended upwards. For the ventilation of the

vehicular tunnel being built in New York City under the East River between Manhattan and Queens, some 46 fans and 82 driving motors have been designed to assure flexibility and a high standard of reliability in service. In a typical combination, a two-speed motor delivers respectively 7 and 50 h.p. for low and medium fan-output, driving the fan through the medium of the shaft of a direct-connected 160-h.p. motor which idles on low speeds but furnishes the power for full-load output of the fan. For Banbury mixers in a rubber mill, large two-speed synchronous motors were built during the year to deliver starting torques of 125 per cent, pull-in torques of 100 per cent, and pull-out torques of 250 per cent. For chemical plants and for oil refineries and pumping stations, completely enclosed self-ventilated explosion-proof motors have been developed for present sizes up to 600-h.p. and future sizes up to 1000-h.p. or more at 3600 r.p.m. These motors have dual-ventilated frame construction, an internal fan to circulate the air sealed in the inner housing, and an external fan to circulate external air through the external cooling ducts. Various developments in motors and control equipment have improved the versatility, capacity, and the quick and precise control of machine tools. New 1000-h.p. 3600-r.p.m. induction motors are operating at some 96 per cent efficiency in driving pumps in a steel plant. Complete use of fiber-glass fabric for insulation in a 10-h.p. motor exhibited at the New York World's Fair enabled it to be accommodated by a 5-h.p. size of frame. This motor is 45 per cent smaller in size and 160 lbs. lighter in weight than a standard 10-h.p. motor with cotton insulation.

First rectifier to be applied to a trunk-line railroad power supply system was the 3000-kw 640-volt ignitron-type unit installed in midyear in New York City by the New York Central Railroad. Such rectifiers, relatively new in the field of electric power supply, continue their ever-widening range of industrial applications. Some 1000-kw, 250-volt units were reported under construction for steel-mill service. For portable service in an Ohio coal mine, a complete 300-kw 275-volt ignitron rectifier substation has been mounted on two mine cars. An 87½-kw 146-volt unit has been applied to underground battery-charging service incidental to construction work on New York City's new Delaware water supply project. Tiny rectifiers of the dry-disc type have been used with great success bridged across the inductive coils of control circuits to reduce or eliminate arcing across relay contacts in such circuits.

G. ROSS HENNINGER.

ELECTRICAL MARINE ENGINEERING. A third turbine-electric tanker similar to the two reported in the 1938 volume was launched during 1939 for operation at high steam pressure and temperature. Several more of the geared direct-current Diesel-electric propulsion equipments, first reported last year, were built during 1939. A new feature of these latter is an arrangement for using the generators as motors for starting the engines, power being supplied by a storage battery. The electromagnetic couplings mentioned last year for geared Diesel marine drives were first applied to cargo vessels in the United States this year, although previously used in Europe. These couplings have two members, both of which

rotate. The driving unit, mechanically connected to the engine, has a squirrel-cage winding similar to that of an induction motor. The driven unit is mechanically connected to the propulsion gears and has a d.-c.-excited field winding. This coupling in addition to serving as a clutch, protects the gears from engine shocks and enables multiple engines to be geared to a common propeller shaft. Units for cargo vessels range up to 4375 h.p. at 180 r.p.m., and operate at 98 per cent efficiency and some 2 per cent slip at full load. The high-speed Diesel-electric propulsion equipment reported last year for four new United States Coast Guard cutters for patrol and ice-breaker service has proved out well in service trials. These equipments adopted the variable-engine-speed variable-voltage control, so effectively used in the new high-speed trains to accommodate varying requirements for propulsion power. The American Institute of Electrical Engineers issued enlarged and completely revised specifications covering Marine electrical equipment and installations.

G. ROSS HENNINGER.

ELECTRICAL TRANSMISSION AND DISTRIBUTION.

More than 5300 miles of new transmission lines were reported as constructed during 1939, compared with 5156 miles in 1938. The outlook for 1940 is for an appreciable increase over these figures. The total in new substation capacity reported as constructed during the year 1939 is more than 2,600,000 kilovolt-amperes as compared with 2,749,000 for 1938; a sharp increase is expected in 1940. Another transmission line from Hoover (Boulder) Dam was placed in service during the summer of 1939, this one to deliver power at 220,000 volts to the system of the Southern California Edison Company, Ltd. For the Los Angeles Bureau of Power and Light, a third 287,500-volt line rated at 150,000-kilowatt capacity has been completed from the Los Angeles terminal about 75 miles to Victorville substation and is scheduled to be completed to Hoover Dam in 1940. First major line from the Government's Bonneville project on the Columbia river is a new 37½-mile 230,000-volt line to Vancouver, Wash., rated at 100,000 kw. Load for this circuit still is largely to be developed, but is expected to come mainly from a new aluminum reduction plant.

Lightning studies continue, and the information so obtained continues to be translated into protective equipment more accurately designed to give specific and effective protection to electrical apparatus. A new and less expensive automatic recording device was announced during the year, an equipment which may be left unattended on such exposed positions as radio towers, tall buildings, etc., to make records of the magnitude and duration of strokes. Thus relatively more records may be obtained for analysis. Artificial lightning now is doing an every-day job in testing certain types of electrical equipment. Also, in the laboratories, it is enabling engineers to duplicate repeatedly the devastating natural strokes that have been recorded by equipment such as that mentioned above and thus learn their characteristics. Improvements in lightning arrester construction include standardized 20-, 25-, 30-, and 37-kilovolt units which may be assembled as required for application to different voltages.

A factory process reported to improve greatly the quality of the lead sheathing on electric power cables was introduced during the year. Among improvements in insulation was the development

of an extrusion process for applying directly to relatively large sized conductors new and effective synthetic materials previously limited to smaller sizes. A new type of mobile power unit for emergency use or for construction jobs comprises a 2000-kw substation, complete with transformer and all related switching and other equipment including forced cooling system, that can be mounted on a chassis with rubber-tired wheels.

G. ROSS HENNINGER.

ELECTRICAL TRANSPORTATION.

A prominent feature of 1939 was the placing in service of a large number of new Diesel-electric high-speed trains on trunk-line railroads of the West and the Middle West and on runs between New York City and Florida points. A Southern railroad has placed in operation several 800-h.p. two-car Diesel-electric trains to furnish rapid air-conditioned local service to counteract bus competition. Considered to be a step in a significant direction is the Burlington's new "General Pershing," each car of which is a complete unit in itself with an individual 220-volt Diesel-engine-driven three-phase generator to furnish the power required for operation of air-conditioning and other electrical equipment. Electric refrigerators are being used in many dining-car kitchens. The novel 5000-h.p. steam-turbine-electric locomotive reported last year was in service operation for several months on the Union Pacific system. The year-end found this locomotive in the shop for certain changes in equipment, and destined for further road service during 1940. The 20 new electric locomotives reported under construction last year by the Pennsylvania Railroad were placed in service in 1939. This road's electrification now includes some 2200 track-miles of line and 200-odd locomotives. During the summer a 450-h.p. Diesel-electric locomotive displaced the old steam locomotive on the Pike's Peak cog-road. Dynamic braking obviates the use of air brakes for the normal down-grade run of this train. The Panama Canal Railroad is replacing its steam locomotives with Diesel-electrics, including some 95-ton 1000-h.p. units geared for operation at 70 miles per hour, but suitable also for switching. Numerous Diesel-electric switching locomotives built for industrial and railroad use during 1939 ranged in size from 150 h.p. to 1500 h.p. A high-speed (4500 r.p.m.) electric motor for small Diesel-electric switchers weighs only about a third as much as a typical 1200-r.p.m. axle-hung motor. Extension of the electrified Paulista Railway (Brazil) from Ityrapina to Bauru required two new 300-kilowatt 3000-volt d.-c. motor-generator substations.

Rapid-transit facilities were improved in many cities during the year. Some 300 more surface cars of the "P.C.C." type (see 1935, 1938 YEAR BOOKS) placed in service during the year brought the total in operation up to some 1100, in 14 cities. Of the 566 trolley-coaches built or under construction, 311 were equipped with compound-wound motors, permitting the advantages of dynamic braking. Some 400-odd Diesel-electric buses were in operation. Extensions to New York City's municipal subway system have required the addition of some 27,000 kw of ignitron-rectifier and synchronous-converter 625-volt power supply equipment to existing substations. See RAPID TRANSIT.

Admiral Byrd's "snow cruiser" is the year's most unusual vehicle. Its power plant consists of

two 150-h.p. Diesel-electric generating sets which serve the four propulsion motors, located one each in the 10-ft. rubber-tired wheels. The 37½-ton vehicle is 55 ft. long, 20 ft. wide, and 15 ft. high, exclusive of the airplane it is fitted to carry. It is designed to operate at 25 miles per hour, and is fitted with living quarters. A novel gear drive for small mining or industrial power-cars or locomotives uses a separate motor for the wheel-groups on each side of the frame, thus eliminating the conventional axles and obviating wheel-slip-page on curves.

At the New York World's Fair the facilities for passenger transportation were phenomenal for a temporary development. Principal feature was the 1568-ft. endless conveyor which carried about 2400 persons per hour at a speed of 102 feet per minute through the "Futurama" exhibit of the General Motors Building. The conveyor train consisted of 23 2-h.p. motor units equally spaced among 299 cars. Each of these cars accommodated two passengers in an upholstered double chair that was fitted with a loud speaker and sound pick-up which delivered to each pair of passengers a synchronized description of the portion of the exhibited before them at any moment. This is the nearest approach so far to the continuous moving sidewalk that has been dreamed of for years by some of those concerned with the problems of mass transportation in congested urban centers. Other indoor transportation facilities at the Fair included 21 electric elevators in addition to 16 electric stairways, having a combined capacity of some 90,000 passengers per hour.

Materials handling is fundamentally a transportation problem, and the year's feature is the 9.6-mile electrically-driven belt conveyor that will transport some 1100 tons of concrete aggregate per hour at a speed of 550 ft. per min. from gravel plant to the construction works at Shasta Dam in California. The conveyor will comprise 26 sections, 23 of which will be driven by 200-h.p. motors and three of which are on a sufficient down-grade to permit them to be used for the generation of power. A new electrically-operated car-dumper in Ohio is designed to handle 45 120-ton cars or 60 90-ton cars per hour.

G. ROSS HENNINGER.

ELECTRIC LIGHT AND POWER.

Throughout the United States the electric power output for 1939 was by substantial margins above that for 1938. For the country as a whole, the electric light and power industry (including both private and municipal utilities) produced 123 billion kilowatt-hours (on the basis of 10 months' record and two months' estimate). This total was hailed by the industry as setting a new all-time high some 13 per cent above 1938 and 36 per cent above the much-discussed 1929. An additional 4.05 billion kw-hr from electrochemical, paper, and other industries and from government hydroelectric plants, plus about 1.27 billion kw-hr from across the Canadian border brought the total power distributed through private and municipal systems during 1939 to more than 129 billion kw-hr. Of this total about 1.7 per cent was required for company use and slightly less than 15 per cent was absorbed in delivering the remaining 83 per cent to individual consumers.

Of the total electric energy generated for electric utility systems during 1939, some 32 per cent was produced by hydroelectric plants and 68 per cent by fuel plants. These figures compare re-

spectively with 38 and 62 per cent for 1938, and reflect the depleting effect of the widespread drought on hydroelectric capacity. In actuality, hydroelectric plants produced during 1939 a smaller total of kw-hr than during 1938, thus thrusting upon fuel plants the burden not only of making up this deficiency, but of absorbing the entire and substantial increase in total power production. (See also POWER PLANTS and TVA.)

Addition of some 900,000 new customers to utility systems during 1939 brings the totals to new high levels and reflects the results of rigorous efforts in the direction of rural electrification. The new total of 28,750,000 customers is classified as follows: farm, 6.2 per cent; residential, 78.8 per cent; commercial-industrial, 15 per cent. Of the approximately 107 billion kw-hr delivered to ultimate consumers during 1939, about 3 per cent to farm customers, 18.5 per cent to residential customers, and 78.5 per cent to commercial-industrial customers. Total energy consumption represented appreciable increases in all these divisions over 1938. 1939 sales of electric energy represented a billed value of \$2,304,000,000, a gain of about 6 per cent for the year as against 13.5 per cent gain in power sales. The gain in sales value for the year was only about half the gain in power sold, reflecting the still-prevalent downward trend in average power rates. During 1939 the average residential consumer used about 890 kw-hr at an average rate of 4.05 cents per kw-hr.

Rate reductions effected during 1939 were exceeded in amount by only one other year in the history of the industry. Total taxes against private electric utilities for the year amounted to some \$345,000,000—15.9 per cent of the gross revenue from electric service.

Preliminary figures indicate capital expenditures of about \$430,500,000 for 1939, divided as follows: \$101,500,000 for steam-electric generating stations; \$17,900,000 for hydroelectric generating plants; \$45,500,000 for transmission lines; \$210,000,000 for distribution lines, \$31,750,000 for substations, and \$22,850,000 for miscellaneous items. The outlook for 1940 is for a much higher budget. The volume of financing during the year amounted to about \$992,347,000, principally for refunding operations, only some \$16,219,000 being new capital.

New capacity in electric generating plants reported for 1939 amounted to 1,284,130 kilowatt, considerably less than in 1938 and much less than is expected for 1940. In steam-electric capacity, 38 private companies reported 3 new plants totalling 155,000 kw and additions to 35 existing plants amounting to 634,450 kw; 19 municipal and other public enterprises reported 3 new plants totalling 40,750 kw, and additions totalling 76,500 kw to 16 existing plants. In hydroelectric capacity, 11 private companies reported 2 new plants totalling 82,500 kw, and additions amounting to 201,200 kw to 10 existing plants. 3 municipalities reported 37,850 kw added to 3 existing plants; the TVA reported 48,600 kw added to one of its plants. In internal-combustion-engine plants, 10 private companies reported additions to 10 plants amounting to 5480 kw; 2 municipalities reported a total of 2500 kw added to 2 plants. Total generating capacity of the electric power industry in the United States at the close of 1939 is estimated as follows: Steam plants, 26,732,000 kw; hydroelectric plants, 9,935,000 kw; internal-combustion plants, 799,000 kw; grand total, 37,466,000 kw. This compares with a grand total of 29,558,000 kw in 1929.

Improvements in operating efficiency in steam-electric generating plants of the United States resulted in the establishment of a new record for low fuel consumption—1.37 lb. of coal-equivalent fuel per kw-hr of output, down from 1.42 for 1938. For the 12 months ending October 31, 1939, the 82 billion kw-hr generated in fuel-burning plants had accounted for the consumption of 44.34 million tons of coal, and of oil and gas the equivalent of another 11.74 million tons of coal. The performance of high-pressure boilers and high-pressure superposed turbine-generator units is considered to have removed these recent developments from the experimental realm and placed them in the realm of established practice.

Federal power projects totalling 1,418,275 kw reported as in operation at the end of 1939 are as follows: (1) TVA—Pickwick, 72,000 kw; Wilson, 184,000 kw; Wheeler, 64,800 kw; Gunter-sville, 72,900 kw; Norris, 100,800 kw. (2) Corps of Engineers—Bonneville, 86,400 kw. (3) Bureau of Reclamation—Hoover (Boulder) Dam, 700,000 kw; Kendrick, 32,400 kw. (4) PWA projects—Platte River, 26,000; Loup River, 45,225 kw; Lower Colorado River, Texas, 33,750 kw. On these projects a total of 488,450 kw was added during 1939, and about that much more is contemplated for 1940.

The Rural Electrification Administration, since its creation in May 1935, has allotted \$267,321,000 of its funds to 687 systems of which 488 have been energized and placed in service; has built some 180,000 miles of line to make electric energy available to some 400,000 rural consumers 224,000 of them added during 1939. (Thus, with the 1,400,000 rural consumers served by private utilities, a total of about 1,800,000 farm customers were receiving electric service at the close of 1939, an increase of nearly 28 per cent for the year.) During 1939, REA allotted \$87,000,000 to 169 projects, as compared with \$180,660,000 and 518 respectively for 1938. Average cost of REA lines is reported to have come down from about \$960 per mile in 1936 to about \$760 in 1939.

The Public Utility Holding Company Act at the close of 1939 was just about where it was at the beginning of the year. After a year of personnel changes and reorganization, the Securities and Exchange Commission was reported to be ready to proceed with its enforcement of the law. Although SEC originally set Dec. 1, 1938 as the tentative deadline for the filing of plans for the integration of power system properties in compliance with Section 11 (b) of the Act, but little action has come of those early filings.

The National Power Policy Committee absorbed the work of the National Defense Power Committee, and the latter was dissolved. The committee has initiated utility meetings in Washington, D. C., promoting the idea of a government-owned superpower "grid" supplied by large steam-electric generating stations located at the sources of fuel. The Federal Power Commission extended its jurisdiction to include a utility system wholly within a state (New Jersey) on the grounds that the system was so interconnected with other utility systems as to form part of an interstate pathway for electric power. The National Association of Railroad and Utility Commissioners took action urging that municipal power systems be subjected to the same degree of public regulation as are private utilities.

Medals. To two prominent members of the American Institute of Electrical Engineers were

awarded high honors for professional attainments. Dr. Gano Dunn of New York City was awarded the Hoover Medal for 1939 for his distinguished public service. The Hoover Medal is awarded from time to time by a joint board representing the American Society of Civil Engineers, American Institute of Mining and Metallurgical Engineers, American Society of Mechanical Engineers, and American Institute of Electrical Engineers. The 1939 Edison Medal of the American Institute of Electrical Engineers was awarded to Philip Torchio of New York City "for distinguished contributions to the art of central-station engineering and for achievement in the production, distribution, and utilization of electric energy."

G. ROSS HENNINGER.

ELECTRONS. See PHYSICS.

ELKS, THE BENEVOLENT AND PROTECTIVE ORDER OF. An organization founded in New York City on Feb. 16, 1868, to promote the practise of Charity, Justice, Brotherly Love, and Fidelity; to increase the welfare and enhance the happiness of its members; to quicken the spirit of American patriotism; and to cultivate good fellowship. Membership in the Order is limited to white male citizens of the United States, not under twenty-one years of age, who believe in the existence of a Supreme Being, who subscribe themselves to its objects, and purposes, and who have been duly initiated in a subordinate lodge.

The supreme legislative body of the whole Order is the Grand Lodge, which is permanently composed of all Past Exalted Rulers who are in good standing in their respective lodges. The Grand Lodge elects all elective national officers of the Order; proposes all amendments to the Constitution, to be ratified or rejected by the subordinate lodges, provides for the institution of subordinate lodges, and enacts all legislation for the administration of the affairs of the Order. The Grand Lodge meets annually.

In addition to the numerous charitable works of the various lodges throughout the country, the Order supports the Elks National Home, established in 1902 at Bedford, Va., for aged and indigent Elks. On July 14, 1926, the Elks National Memorial in Chicago, Ill., was dedicated to the memory of the members of the Order who died during the World War, and in 1928 the Elks National Foundation was established. The Order publishes *The Elks Magazine*.

In 1939 the Order had 1400 lodges with a membership of 500,000. During the year it expended \$1,541,000 in charity.

The officers for 1939 were: Grand Exalted Ruler, Henry C. Warner; Grand Treasurer, R. S. Barrett; and Grand Secretary, J. Edgar Masters. Headquarters of the Order were at Chicago, Ill.

ELLIS, (HENRY) HAVELOCK. A British sociologist and writer, died in Hinglesham, England, July 8, 1939. Born at Croydon, Feb. 2, 1859 he was educated privately. Sent to New South Wales for his health he taught school there during 1875-79, but returning to England he studied medicine at St. Thomas's Hospital and entered practice. Shortly afterward, however, he quit that profession to devote himself to writing. During 1887-89, he edited the *MERMAID SERIES OF OLD DRAMATISTS*, and during 1889-1914, the *CONTEMPORARY SCIENCE SERIES*, to which he contributed *The Criminal* (1890, 4th ed., 1910) and *Man and Woman: A Study of Human Secondary Sexual Characters* (1894, 8th ed., 1934).

Increasingly absorbed in the new science of psychology and biological science, he brought out *Sexual Inversion*, vol. ii of *STUDIES IN THE PSYCHOLOGY OF SEX* in 1897, which was banned in England as a "wicked, bawdy, scandalous, and obscene book." *STUDIES IN PSYCHOLOGY*, an exhaustive study of sexual psychology, normal and abnormal, appeared in seven volumes: *The Evolution of Modesty* (1899; 3d ed., 1910); *Sexual Inversion; Analysis of the Sexual Impulse* (1903; 2d ed., 1913); *Sexual Selection of Man* (1905); *Erotic Symbolism* (1906); *Sex in Relation to Society* (1910); and *Eonism and Other Supplementary Studies* (1928). This monumental work played an important part in bringing about a revolution in the attitude toward sex and its problems. The complete studies were issued in the United States between 1901 and 1928, and in 1936 a popular four-volume edition was published and attained wide circulation.

A prolific writer, other of his works included: *Affirmations* (1897); *The Nineteenth Century: A Dialogue in Utopia* (1900); *Study of British Genius* (1904; 2d ed., 1926); *The World of Dreams* (1911); *The Task of Social Hygiene* (1912); *Impressions and Comments* (1914; 2d Series, 1921; 3d Series, 1924); *The Philosophy of Conflict and Other Essays* (1919); *Little Essays of Love and Virtue* (1922); *Sonnets with Folk Songs from the Spanish* (1925); *More Essays of Love and Virtue* (1931); *Views and Reviews*, 2d Series (1932); *Psychology of Sex: A Manual for Students* (1933); *My Confessional* (1934); *From Rousseau to Proust* (1936); *Questions of Our Day* (1936); *Sex in Relation to Society* (1937; 2d ed., rev.). His *My Life* was published posthumously in November, 1939.

ELMIRA COLLEGE. An institution for the higher education of women in Elmira, N. Y., founded in 1855. The enrollment for the autumn of 1939 was 351. There were 50 members on the faculty. The endowment of the college amounted to \$860,167, and the income for the year, exclusive of gifts, was \$285,911. During the session of 1938-39 gifts amounting to \$4280 were received. There were 48,062 volumes in the library. President, William S. A. Pott, M.A., Ph.D.

EMIGRATION. See IMMIGRATION AND EMIGRATION.

EMORY UNIVERSITY. An institution for higher learning in Atlanta, Ga., coeducational in the graduate and professional schools (except the school of medicine), founded in 1836. The enrollment for the autumn of 1939 was 1640 (including the two Junior Colleges). The 1939 summer session had an attendance of 674. The faculty numbered 328. The endowment amounted to \$5,211,664, and the income for the year was \$807,175. There were 175,086 volumes in the library. The university operates Emory junior colleges at Oxford, Ga., and Valdosta, Ga., duplicating the work of the first two undergraduate years on the Atlanta campus. In 1939 Emory received a grant of \$2,000,000 from the General Education Board of New York and a gift of \$1,000,000 from Samuel C. Dobbs of Atlanta for the purpose of strengthening the College of Arts and Sciences and the Graduate School so that the Ph.D. degree may be offered in certain fields. President, Harvey W. Cox, Ph.D., LL.D.

EMPLOYMENT. See LABOR CONDITIONS; AUTOMOBILES.

EMPLOYMENT SERVICE, U.S. See UNITED STATES EMPLOYMENT SERVICE.

ENCEPHALOMYELITIS, EQUINE. See VETERINARY MEDICINE.

ENCYCICALS. See ROMAN CATHOLIC CHURCH.

ENDERBURY ISLAND. An island (3° 7' N. and 171° 3' W.) of the Phoenix group in the Pacific, under joint administration of the United States and Great Britain. The island is 2½ miles long and 1 mile wide. It is valued as a base for transpacific commercial air services. See CANTON ISLAND.

ENDOCRINOLOGY. See BIOLOGICAL CHEMISTRY.

ENGINEERING. See BRIDGES; CANALS; DAMS; ELECTRICAL MACHINERY; FIRE PROTECTION; GARBAGE AND REFUSE DISPOSAL; TUNNELS; ETC.

ENGINEERS, CORPS OF. The Corps of Engineers, U.S. Army, under the direction of the Secretary of War and supervision of the Chief of Engineers is generally charged with investigation and construction of works of improvement of rivers, harbors, and other waterways for navigation and for flood control. Many of the projects intended primarily for one of these two purposes involve features designed for power development, irrigation, pollution abatement, or water conservation. During 1939 approximately 1000 river and harbor projects and 370 flood control projects were in force and active work was prosecuted on 379 of the river and harbor projects and 114 flood control projects. An Act of Congress approved June 28, 1939, appropriated \$96,000,000 for the prosecution of river and harbor works, \$133,000,000 for general flood control projects, and \$39,000,000 for Mississippi River flood control work. This Act also appropriated \$2,000,000 for a power plant at Fort Peck Dam, Montana, and \$7,000,000 for a power plant at Bonneville Dam, Oregon, both of which projects are now being constructed by the Corps of Engineers.

During 1939 the major river and harbor projects under way included the following: Construction of a 40-ft. channel in Boston Harbor; the widening of the 40-ft. channel in Hudson River for the full river width between 59th Street and Ellis Island, and the dredging of a 48-ft. depth over a 1400-ft. width between West 40 and West 54th Streets, New York; the completion of the Miami Harbor Project; the deepening of the Great Lakes-Hudson River waterway to 14 feet; the widening and deepening of Cape Cod Canal; the deepening of the Intracoastal Waterway south of Cape Fear River, N. C., to provide a 12-ft. channel; the improvement of the Sabine-Neches to Corpus Christi reach of the Gulf Intracoastal Waterway.

In addition, material progress was made in the construction of the Tuscaloosa Lock and Dam on the Warrior River, Alabama, to replace existing Locks 10, 11, and 12. Three additional locks and dams on the Upper Mississippi River were completed, leaving only one of the authorized 26 to be finished during 1940. On the west coast enlargement of San Diego Harbor was continued; one of four concrete arch debris dams was completed in the Sacramento River Basin and two others are under construction; extensive work in restoration of channel depths and jetties at Grays Harbor, Washington, was performed, and the widening of the 30-ft. San Joaquin River channel was started.

Flood control construction included activities

on many dams, the more noteworthy being those at Franklin Falls, N. Hamp., in the Merrimack Valley; Knightsville, Mass., on the Westfield River; Arkport and Whitney Point, N. Y., in the Susquehanna Valley; Mahoning, Crooked Creek, Tionesta and Loyalhanna in the Allegheny Valley above Pittsburgh; Wappapello on the St. Francis River, Mo.; Sardis in the Yazoo Valley, Miss.; Great Salt Plains and Fort Supply in the Arkansas River basin; Denison Dam on the Red River, Okla.; Hansen and Prado in the Los Angeles Area, Calif., and Mud Mountain Dam on the Puyallup River, Wash. The Conchas Dam in New Mexico was completed. Local protection works consisting of levees, flood walls, and channel improvements, were under way in the lower Connecticut Valley, in the Susquehanna Valley, New York and Pennsylvania. Channel improvement at Johnstown, Penn., is well advanced. Flood walls and levees were under construction at Ironton, Wellsville, Harrisburg, Huntington, and Paducah in the Ohio Valley and extensive work has been accomplished in the Wabash River Basin, Ind., Los Angeles County, Calif., and the lower Columbia and Willamette Valleys, Ore. and Wash.

JULIAN L. SCHLEY.

ENGINES, INTERNAL COMBUSTION. Diesel engines aggregating over two million horsepower for various applications were built in the United States during 1939. These included 125,000 h.p. for switching and main-line locomotives, 116,000 h.p. for cargo vessels being built by the Maritime Commission, over 500 engines for buses, a considerable number for industrial plants and an increasing number for municipal power plants in sizes from 300 to 2500 h.p. Tractors also accounted for many smaller sized engines but application to trucks is progressing slower than had been anticipated. Several contracts were placed for Diesels in oil pipeline pumping service.

Abroad, Diesel engines have made vast gains in the marine field. For several years past approximately 90 per cent of the ships built in Scandinavian countries and Holland have been Diesel driven, although in Great Britain motorships have comprised less than two-thirds of the vessels built during the same period. Last year over 200 motorships, totaling 1,125,000 tons, were built in European yards and it is reported that 350 motorships, representing 2,250,000 tons, are now under construction. While the greater number of these are cargo boats, more passenger motorships are now building in European yards than steamships. However, the reverse is true in the United States, probably because recent advances in steam practice have rendered the economy of the latest types of steam-driven ships comparable with those propelled by the latest types of Diesel engines.

Outstanding among marine applications is an English ship of 27,000 tons having four Diesels of 8000 h.p. each and a Dutch passenger liner which will be propelled by three 12,500-h.p. Diesels. This is the largest power for a single-acting marine Diesel yet attempted. The double-acting two-stroke-cycle engine is being used in many of the fast cargo boats, but for passenger liners the single-acting two-stroke-cycle type predominates because of its lesser height, which is an important factor in such ships. Waste-heat boilers, utilizing the heat of the exhaust gases for auxiliary steam production, are finding wide ap-

plication in the marine field. See **ELECTRICAL MARINE ENGINEERING.**

Recent progress in the United States has been toward further standardization, especially of component parts, increased speeds, reduced weight per horsepower and improved performance. There has been more extensive use of alloys and welded fabrication, as well as greater precision in manufacturing methods. Other refinements apply to controlled pressure lubrication, fuel injection, scavenging, supercharging, and silencing. Several manufacturers brought out new lines of lightweight high-speed engines during 1939.

For installation in certain localities where both oil and natural gas are available and plentiful, engines adapted to burning either fuel have become popular. Such engines are of two general types, namely, that designed to burn oil or gas on the regular Diesel cycle or that which burns oil on the Diesel cycle and, by changing a few parts, may be operated on the Otto cycle with gas. Outstanding among such engines is a 3200-h.p. unit of the first type now being built for installation in the municipal power plant at Lubbock, Tex., which already has three similar engines, and a 2700-h.p. unit of the second type which was recently installed at Coolidge, Ariz.

In stationary practice the two-stroke-cycle Diesel is more widely used for large units of 1000-h.p. and over, within which range single- and double-acting units appear to be about equally divided. However, large stationary engines operating on the four-stroke cycle are almost invariably of the single-acting type.

While the gas turbine has been under development for many years abroad, only lately has it been perfected by a Swiss Company to the point of justifying commercial application. Thirteen such turbines are now in use, chiefly for driving air compressors in connection with the Houdry oil-refining process, one such installation being in the United States. These are exclusive of small gas turbines as employed for driving superchargers and blowers supplying air under pressure to the furnaces of Velox boilers.

ALFRED D. BLAKE.

ENGLAND. See **GREAT BRITAIN.**

ENGLAND, CHURCH OF. In England, that church which is established and endowed by law as the national church. Its faith is represented in the United States by the Protestant Episcopal Church (q.v.). (For details of church government, see the **NEW INTERNATIONAL YEAR BOOK**, 1932.) In 1937 there were 2,372,079 Easter communicants in the 43 English dioceses. Incumbents numbered 12,645 and assistant curacies, 4527. The total voluntary parochial contributions amounted to £1,219,872.

The war altered for the Church the whole character of a year which for three quarters of its length had promised to be one of quiet and steady consolidation at home and of enterprising advance in new spheres abroad. With the approval of the King, and by an Order of His Majesty's Privy Council, Sunday, Oct. 1, 1939, was appointed to be observed as a Day of National Prayer. A Message on "Christian Citizenship in Time of War" was issued, and the Archbishop of Canterbury on September 1st appealed for "kindly interest and friendship for the evacuated children."

Outstanding among the war problems have been those associated with the vast migrations of

evacuated children; and with the numerous small groups of antiaircraft and other troops necessarily removed by their isolation from the steady influence of Army Chaplains. Soon after the outbreak of war, the Archbishop of Canterbury announced that any clergyman who wished to be appointed as a temporary chaplain in His Majesty's Forces, should make his application to the Bishop of his Diocese, and there was a widespread immediate response. In many places the parochial clergy have been acting as Chaplains for the permanent First Aid Posts which have been set up in preparation for possible air raids.

The postponement was announced of the Lambeth Conference of 1940, which was to have been attended by Anglican Bishops from all the overseas provinces and dioceses, and for which extensive missionary and other preparations were being made throughout the earlier part of 1939.

At the Autumn Session of the Church Assembly a Measure was passed to postpone the election of members of the House of Laity, due to be held in 1940, until such time, up to 1945, as the Archbishops of Canterbury and York may direct. The Clergy National Emergency Precautions Measure, 1939, was passed through all its stages; its object being "to enable the Archbishops of Canterbury and York to make regulations for the more effective exercise of the cure of souls in the event of war, and to enable the Ecclesiastical Commissioners and Queen Anne's Bounty to make financial provision in respect thereof." Various Reports were received including one from the Social and Industrial Commission recommending a revised constitution for that body, which was approved. The subjects of the more outstanding debates of the spring and Summer Sessions included, besides finance and missions, Parochial Endowments; the "First Charges" in the Budget; the Age of Retirement for Bishops and Incumbents; and the Persecution of Christians. The Budget of the Church Assembly for 1940 provides for the expenditure of £145,000. Work was going on all over the country on building schemes assisted by loans from the Central Loan Fund. In the early part of the year much attention was given to new schemes of development for many of the Church Training Colleges, but the outbreak of hostilities interfered with building schemes.

During the year the dioceses made strenuous efforts to complete arrangements for the building of senior schools with the help of Government grants under the 1936 Education Act. So far 24 agreements have been signed by Local Education Authorities for new or re-conditioned Church senior schools.

Important in the field of missionary activity was the publication of "Partners," the seventh Unified Statement of the Work and Needs of the Church Overseas. In it the new relationship between the Church at home and the younger Churches overseas was presented. After the outbreak of the War missionary study in small groups in many parts of the country began to take the place of Missionary Schools and large meetings. During the year the international meeting of missionary representatives of every part of the world at Tambaram, Madras, in December, 1938, greatly influenced missionary thought and co-operation. The meeting in July-August, 1939 at Amsterdam of 1500 young people from all the Churches of the world (except the Roman Catholic Church) was an outstanding event in modern

Christian youth work, as a large number of the non-European representatives came from the younger Churches overseas.

In the sphere of Foreign Relations during 1939 the principal events have been the Union of the Reformed Churches of France, a summary of which was published by the Council and presented in May to the Church Assembly; and the acceptance by the Convocations of Canterbury and York of the agreements reached with the Lutheran Churches of Estonia and Latvia whereby by economy Anglican bishops may take part in the consecration of Estonian and Latvian bishops and Estonians and Latvians unable to receive the ministrations of their own clergy, may resort to the clergy of the Church of England.

The £50,000 Church of England Appeal for Refugees which was authorized by the Church Assembly at the Autumn Session of 1938, met with a generous response resulting in a total of over £65,000. The money is being administered by the Central Board of Finance in conjunction with the Christian Council for Refugees from Germany and Central Europe. On the outbreak of the War the Ecclesiastical Commissioners decided to devote any moneys which would ordinarily have been used for new augmentations, to the making of temporary income-grants to the parochial clergy where such grants might appear to be most needed; and this policy will be followed until further notice. The Governors of Queen Anne's Bounty were engaged throughout the year in the settlement with the Tithe Redemption Commission of amounts of compensation stock transferable to them for the various benefices consequent on the Government extinguishment of tithe rentcharge.

During 1939 the Pensions Board paid out in pensions over £272,700, of which only £100,000 was taken from benefices. Investments (apart from those of the Clergy Pensions Institution) amount to £4,861,000, and despite the War still show an appreciable margin of value over their cost price. Contributions from clergymen towards their retiring or disability pensions total over £186,000. The Board inaugurated the 1939 National Appeal for a fund to augment the small contributory pensions of clergy widows and dependants, and to make pension grants to those unable to benefit under the Widows Measure. Since the War the appeal to the public has been temporarily discontinued. Promises of legacies and collections taken in churches continue to be received. The total received to date is £45,000.

The work of the Central Youth Council during 1939 was concerned primarily with three things—the establishment of Diocesan Youth Councils in every diocese, as far as local circumstances permitted; the World Youth Conference at Amsterdam; and the special conditions arising from the declaration of war in September. There was much evidence of increased activity in the dioceses and news was continually coming in of new Youth Fellowships and other kindred organizations under the direction of the incumbent in a great number of parishes.

Among the appointments of the year were the following: The Right Rev. A. W. Barton, Archbishop of Dublin; The Right Rev. G. F. Fisher, Bishop of London; The Right Rev. D. H. Crick, Bishop of Chester; The Rev. C. M. Chavasse, O. B. E., Bishop of Rochester; The Ven. L. S. Hunter, Bishop of Sheffield; The Rev. G. W. R. Tobias, Bishop of Damaraland; The Right Rev.

E. D. L. Danson, Bishop of Edinburgh; The Very Rev. A. Carlisle, Bishop of Montreal; The Ven. G. P. L. Turner, Bishop of St. Helena; Canon H. D. Martin, Bishop of Saskatchewan; The Right Rev. J. Morgan, Bishop of Llandaff; Canon E. W. Williamson, to be Bishop of Swansea and Brecon.

ENGLISH LITERATURE. See LITERATURE, AMERICAN AND ENGLISH.

ENTOMOLOGY, ECONOMIC. The Bureau of Entomology and Plant Quarantine is concerned with investigations on insects and their economic relations; the development and application of methods for their eradication or control; the carrying out, in co-operation with the States, of necessary work to prevent the spread and to control or eradicate insect pests and plant diseases that have gained more or less limited foothold in the United States; and the utilization of those species that are beneficial. These activities include investigations on and direction of control campaigns against the species injurious to agriculture, horticulture, and arboriculture; investigations on the species affecting the health of man and animals, or infesting human habitations or injurious to industries; the culture and use of honeybees and beekeeping practices; investigations on the natural enemies of insects and plant pests and the possibility of using these as aids for control; the taxonomy, anatomy, physiology, and responses of insects; chemical and other problems relating to the composition, action, and application of insecticides; and the development of methods of manufacturing insecticides and materials used with them.

To aid in carrying out these assignments and to protect agriculture from plant pests and diseases, the Bureau is responsible for the enforcement of the following acts and restrictive orders promulgated thereunder: The Plant Quarantine Act of 1912, as amended; the Insect Pest Act of 1905; the act of 1922 governing the importation of adult honeybees; the act providing for the Mexican border inspection and control service; the act providing for export certification to meet sanitary requirements of foreign countries for plants and plant products; the Terminal Inspection Act of 1915 (in co-operation with the Post Office Department).

Grasshoppers. The late part of the summer of 1938 was marked by unprecedented flights of the lesser migratory grasshopper from western South Dakota into western North Dakota and eastern Montana. Only the most rapid and vigorous action prevented a major disaster to crops in 1939. Grasshopper control was carried on in co-operation with 24 Western States. The infestation was heavy, affecting all States west of the Mississippi River but one, and also the States of Illinois, Michigan, and Wisconsin. During the 1938 campaign approximately 235,000 tons of bait were made available to the States and its application resulted in the saving of over \$176,000,000 worth of crops. Fall surveys indicated heavy concentration of eggs in the Great Plains and Rocky Mountain States, from Texas to Minnesota. In extensive experiments with substitutes for wheat bran or sawdust in grasshopper bait, cottonseed hulls, citrus meal, and chopped alfalfa have given promising results.

Mormon Crickets. In the fall of 1937 more than 18,000,000 acres were found to be infested in the States from North Dakota and Nebraska westward to Nevada, Oregon, and Washington,

about one-third of the entire area being moderately or heavily infested. The control campaign in 1938 was based fundamentally on crop protection. Sodium arsenite dust, metal barriers, and oil-and-water barriers were the most effective methods of control. A total of 230,000 acres was dusted and 1,100,000 lb. of dust was applied. Over 10,000 acres was baited, metal barriers were set up for more than 300 miles, and 75,000 gal. of oil was used on 425 mi. of streams and ditches. A bait containing sodium fluosilicate as a poisoning agent was developed in 1938. Field tests in the spring of 1939 with this material resulted in the destruction of from 78 to 98 per cent of the crickets.

Japanese Beetle. The older areas infested by the Japanese beetle increased in size about 1266 sq. mi. during 1938 and now cover approximately 15,117 sq. mi. Unusually light infestations occurred in the oldest infested area near Philadelphia and a somewhat lighter infestation in much of New Jersey and eastern Pennsylvania north of the Schuylkill River. Extremely heavy infestations occurred in northern Delaware, northeastern Maryland, southeastern Pennsylvania, and in the metropolitan New York area. An investigation on the use of hydrocyanic acid gas as a fumigant for adult Japanese beetles in refrigerator cars was completed and dosage tables worked out for various temperatures. Japanese beetle parasites were liberated at 64 colonies in Maryland, 18 in Connecticut, and 12 in New York. The milky disease now appears to occur rather generally through much of the older heavily infested area. This disease has not been found at points on the outer fringe of this area or in the New England States.

European Corn Borer. A distinct general increase in population of the European corn borer in the region extending from the Great Lakes eastward to Massachusetts and central Connecticut occurred in 1938. As a result of breeding of strains of sweet corn resistant to the corn borer, 93 strains showed apparent resistance. Breeding results with field corn indicated that of 235 strains tested 32 were resistant.

Vetch Bruchid. During the year the vetch bruchid was found to be infesting vetch seed in northwestern Oregon. Heretofore this insect had been known only from the Atlantic coastal States.

Sugarcane Borer. Sugarcane borer caused a loss of \$4,700,000 to sugarcane in 1938. Recent experimental work in the control of this insect by sprays containing cryolite gave approximately 90 per cent control.

Stored-Grain Insects. A study of the condition of farm-stored grain was made in 1938, resulting in the publication of Farmers' Bulletin No. 1811 entitled, "Control of Insects Attacking Grain in Farm Storage."

Fruit Insects. Studies of the influence of particle size have indicated that extreme fineness is not necessary for the maximum effectiveness of lead arsenate, calcium arsenate, cryolite, paris green, or phenothiazine in the control of the codling moth. Phenothiazine continued to give control of the apple maggot in the Hudson River Valley. Thorough application of sulphur materials in the calyx and first-cover sprays resulted in marked reduction in populations of common red spider. Control of pear thrips in Oregon with two applications of a 2 per cent miscible oil emulsion with nicotine sulphate gave a yield of approximately

6 tons of fruit per acre, as compared with less than 1 ton for the unsprayed trees.

Peach Insects. Mass liberation of parasites indicated that early season parasitization can be substantially increased by the liberation of comparatively small numbers of parasites, and the percentage of parasitization of the twig-infesting broods of the oriental fruit moth is directly correlated with the amount of infested fruit later in the season. Field and laboratory experiments with solutions of dichloroethyl ether gave almost complete kill of plum curculio in the soil.

Scale Insects. Investigations in southern California indicated that the strain of red scale that is resistant to hydrocyanic acid gas is not resistant to methyl bromide. Promising results have been obtained in preliminary experiments in fumigations with mixtures of hydrocyanic acid gas and methyl bromide. Sprays that leave a heavy noninsecticidal residue on citrus in Florida resulted in an increase in the populations of purple scale and Florida red scale.

Fruitfly Investigations. Heavy populations of Mexican fruitfly appearing during the last year have been traced to the abnormal production of a second crop of a wild native host abundant in northeastern Mexico. In the Rio Grande Valley of Texas there was an unprecedented crop of fruit and the highest number of fruitfly larval infestations on record, which made sterilization of citrus fruit of prime importance throughout the latter half of the shipping season.

Gypsy Moth. The severe hurricane in the fall of 1938 resulted in spreading gypsy moth eggs to areas heretofore uninfested by this insect. The use of the autogiro in scouting and applying insecticides in gypsy moth work is still in the experimental stages but is giving promising results. The severest and most extensive defoliation that has ever occurred in the area between the barrier zone and the Connecticut River in Vermont, Massachusetts, and Connecticut developed in the summer of 1938.

White-Fringed Beetle. Studies of the white-fringed beetle during the year definitely proved that this insect has but one generation per year. The rate of reproduction is governed by the kind of food plant. The peanut is the most favored food plant yet observed. The maximum number of eggs laid by this insect when feeding on peanuts is over 2400. Calcium arsenate dust on host plants is an effective means of reducing beetle populations. Oil base emulsions as a herbicide are being used successfully to destroy vegetation along railroad rights-of-way, roadsides, abandoned lands, and waste areas, and clean cultivation is proving an efficient control in crop areas. Field observations indicate that the use of these methods during 1938 and 1939 resulted in a drastic reduction in beetle population in all infested areas. On Jan. 15, 1939, a Federal domestic plant quarantine was promulgated to prevent the spread of this pest. State quarantines supplement this Federal quarantine on intrastate movements of host material. No infestation was found in any State in which the beetle had not previously been known to exist. The total infested area in 1939 amounted to approximately 60,000 acres.

Western Pine Beetle. Large tracts of forest land on the east slope in California have been surveyed and zoned as to relative degree of hazard, and it is believed that the danger of serious outbreaks will be greatly reduced by selective cutting of high-risk trees.

Black Hills Beetle. The Black Hills beetle is the most destructive forest insect in the central Rocky Mountain region. The volume of loss caused by this insect during the last five years is seven times as great as the total fire losses and nearly as great as the total volume of timber cut in the States of Wyoming, Utah, and Colorado. In practically all areas where control work has been conducted the heavy epidemics have been reduced to an endemic condition.

European Spruce Sawfly. Four areas of heavy infestation were found in a survey conducted during 1938—two in southern New Hampshire, one in central Vermont, and one in southern Vermont. Colonies of a European parasite of this insect were liberated at every locality in New Hampshire, Vermont, and New York, wherever sufficient larvae were found to make possible successful establishment of the parasite.

Tomato Fruitworm. Experiments during the year demonstrated that cryolite dust mixture containing 70 parts by weight of cryolite and 30 parts of talc gave the best yield of uninjured fruit. No insecticidal material containing substances poisonous to human beings should be applied within three weeks of first picking.

Pea Weevil. In the Pacific Northwest this insect is being successfully controlled by growers, based on research with dust mixtures containing rotenone. In 1937, 47 tons of this material was used. In 1938, 211 tons was used, indicating a decided increase in the use of this material. Large-unit machines are now being used, the largest dusting an 80-foot swath.

Bollweevil. Although the damage caused by the bollweevil in 1938 was almost double that of 1937, it was about 2 per cent below the average for the last 25 years. On experimental plats in the Delta section of northeast Louisiana, used as an index of weevil damage, standard dusting procedure resulted in a gain of 188 lb. of seed cotton per acre as compared to an average of 322 lb. over a period of years.

Pink Bollworm. In the last two or three years the infestation of the pink bollworm in the lower Rio Grande Valley of Texas and across the International Boundary in Mexico has been the cause of considerable concern because of the danger of spread of this pest into and throughout the main Cotton Belt. The efforts to suppress this infestation have attracted considerable attention, the most recent manifestation of which is legislation approved Aug. 9, 1939, authorizing conversations between representatives of the United States and Mexico to consider eradicating or controlling the pink bollworm in both countries by a co-operative programme.

Screwworms. A new insecticide, diphenylamine, has been found to be the most practical, in general, for the control of screwworm on domestic animals. Applications of this material to wounds every third day will prevent them from becoming infested.

Peach Mosaic and Phony Peach Diseases. During the fiscal year 1939 almost 16,000,000 orchard trees on more than 145,000 properties were inspected. In excess of 147,000 diseased trees were found, of which more than 120,000 were destroyed. There is evidence of substantial reductions in incidence of new cases of these two diseases.

Citrus Canker Eradication. Government inspection in Louisiana and Texas resulted in the finding of but one recurring infection and one

infection on a property in which the disease had not previously been detected in Brazoria County, Tex. One hundred six infected trees in these areas consisted of small seedlings. During the year 2,000,000 escaped and abandoned citrus trees were removed and destroyed to eliminate harboring places for this disease.

Dutch Elm Disease. Discovery of considerable numbers of infected trees in several localized sections in New Jersey and Connecticut accounts for the increased number of Dutch elm diseased trees discovered during the year. In 1938, 15,909 diseased trees were found, as compared with 6,500 in 1939. Elms infected with the disease were found in Pennsylvania for the first time during the year, and sporadic infections were discovered in additional towns in Dutchess, Orange, and Ulster Counties, N. Y., outside of the previously known infected zone. Surveys in States remote from the main infected area failed to disclose a single new infection centre.

White-Pine Blister Rust Control. During the calendar year 1938 more than 98,000,000 currant and gooseberry plants were destroyed on white pine forest areas in the United States, totaling 2,234,000 acres. During the calendar year blister rust was found for the first time in 70 counties—6 in the Southern Appalachian States, 60 in the North Central States, 2 in Montana, and 2 in California.

Black Stem Rust Control. During the year barberry bushes, which act as alternate host for this disease, were eradicated in 221 counties in 17 States. This resulted in the removal of 47,445,000 bushes.

Transit Inspection. During the fiscal year 1939 inspectors stationed at parcel post, express, and freight terminal points in 16 cities inspected 1,163,897 shipments for compliance with regulations of Federal domestic plant quarantines. During the same period over 930,000 freight waybills were examined to determine certification status of shipments. Three thousand six hundred twenty-eight shipments consigned in violation of the regulations of Federal domestic plant quarantines were intercepted.

Foreign Plant Quarantines. In connection with extensive experiments to determine the possibility of so treating fruit originating in countries in which fruitflies are known to occur as to insure freedom of the fruit from infestation, studies in Hawaii have resulted in authorizing the movement from Hawaii to the mainland under permit of papayas sterilized by the vapor-heat method. This method of treatment also authorizes the shipment of certain other fruits and vegetables from Hawaii to the mainland under the same conditions.

LEE A. STRONG.

ENTOMOLOGY AND PLANT QUARANTINE, BUREAU OF. See ENTOMOLOGY, ECONOMIC.

EPISCOPALIANS. See PROTESTANT EPISCOPAL CHURCH; ENGLAND, CHURCH OF.

ERITREA. See ITALIAN EAST AFRICA.

EROSION. See SOILS.

ESP. Extra-Sensory Perception. See PARAPSYCHOLOGY.

ESPIONAGE. See EUROPEAN WAR; FEDERAL BUREAU OF INVESTIGATION; MEXICO, NETHERLANDS, AND PANAMA CANAL ZONE under *History*.

ESTONIA. A Baltic republic established Feb. 24, 1938. Capital, Tallinn (Reval).

Area and Population. Estonia has an area of 18,359 square miles, including internal lakes, and a population estimated on Jan. 1, 1939, at 1,133,940 (1,126,413 at the 1934 census). The urban population in 1938 was 345,408 (323,007 in 1934). Living births in 1938 numbered 18,450 (16.3 per 1000 inhabitants); deaths, 16,470 (14.5 per 1000); marriages, 9560 (8.4 per 1000). Estimated populations of the chief cities on Jan. 1, 1939, with 1934 census figures in parentheses, were: Tallinn, 144,978 (137,792); Tartu, 60,281 (58,876); Narva, 23,834 (23,512); Pärnu, 21,886 (20,334).

National Defense. Military service is compulsory. The peacetime strength of the army in 1937 was 1320 officers and 9800 men. There was a reserve of 90,000. The air force comprised 68 aircraft. See *History*.

Religion and Education. About five-sixths of the people are Lutherans and the rest chiefly Greek Orthodox and Roman Catholics. At the 1934 census 3.9 per cent of the population 10 years of age and over were illiterate. School attendance in 1937-38 was: Primary, 106,859; grammar, 12,992; high, 3650; universities and other institutions for higher education (excluding military), 4077; professional, 9866.

Production. Agriculture and dairying support nearly 70 per cent of the population. Yields of the chief crops in 1939 were (in metric tons): Wheat, 80,700; barley, 83,200; rye, 204,300; oats, 151,000; potatoes, 997,600; linseed, 8900; flax fiber, 7600. Livestock statistics for June, 1938, were: Cattle, 661,000; sheep, 650,000; swine, 385,000; horses, 219,000. The net value of industrial production was estimated at 113,000,000 crowns in 1938. The leading industrial products, with the amounts produced in 1938 where available, were: Cotton fabrics, 21,872,000 yds.; cotton yarns, 11,684,000 yds. (1937); wood pulp, 11,473 metric tons; cellulose, 73,088 metric tons (1937); paper, 42,635,000 lb.; timber sawn in large-scale industries, 8,829,000 cu. ft.; matches, 52,000,000 boxes; oilshale, 1,473,000 metric tons; electric current, 150,000,000 kilowatt hours.

Foreign Trade. Imports for consumption were 107,198,000 crowns in 1938 (111,062,000 in 1937) and exports of Estonian products were 103,923,000 crowns (106,012,000). Of the 1937 imports, Germany supplied 26.1 per cent by value, United Kingdom 16.6, United States 8.2, and the Soviet Union 5.6 per cent. Of the 1937 exports, the United Kingdom took 33.9 per cent, Germany 30.5 per cent, Russia 4.1 per cent, and the United States 2.8 per cent. See IMPORTS AND EXPORTS.

Finance. For the fiscal year ending Mar. 31, 1940, the budget (exclusive of supplementary budgets) was estimated to balance at 105,878,000 krooni (crowns). Estimated current receipts (1938-39) were 106,018,000 krooni; capital receipts, 1,588,000 krooni; expenditures, 107,606,000 krooni. The public debt on Jan. 1, 1939, was divided as follows: External, \$19,880,000, £1,657,000 and 7,098,000 Swedish crowns; internal, 12,266,000 krooni. The Estonian crown exchanged at an average rate of \$0.2695 in 1937 and \$0.2712 in 1938.

Transportation. In 1938 Estonia had about 889 miles of railways, excluding tramways. (On the railway connecting Tallinn with the Russian frontier, the width of the tracks was altered in 1939 to conform with the Russian gauge. See *History*). There were (1939) 13,416 miles of roads and highways. Airlines in 1938 connected Tallinn, Helsinki, Leningrad, Berlin, Warsaw, and other

cities. The gross tonnage of the Estonian merchant marine on June 30, 1938, was 177,100. The net tonnage of vessels clearing Estonian ports (1938) was 62,000.

Government. The Constitution which went into effect Jan. 1, 1938, vested extensive powers in a President elected for six years. It established a bicameral National Assembly comprising a Chamber of 80 deputies elected by universal suffrage and a National Council of 40 elective, appointive, and ex-officio members. The National Assembly was to be renewed at least every four years. For the method of election of the President and National Assembly, see 1938 YEAR BOOK, p. 239. President, Konstantin Päts, elected Apr. 24, 1938. Premier at the beginning of 1939, Karl Einbund (Kaarel Eenpalu), re-appointed May 9, 1938.

HISTORY

Neutrality Policy. The internal struggle for further democratization of the government established in 1938 (see 1938 YEAR BOOK) was interrupted in 1939 by the onslaught of the European War and by the establishment of a Soviet protectorate over Estonia under cover of that conflict. Like the two other small Baltic states, Estonia fought throughout the first three quarters of 1939 to resist the demands of both the Soviet Union and Germany and to safeguard its independence and territorial integrity.

The Soviet proposal advanced in the spring for a joint Anglo-French-Soviet guarantee of the Baltic States' independence was no less firmly opposed by Estonia and Latvia than by Finland. The proposal collapsed when Britain and France refused to join Russia in forcing its acceptance upon these small states. Estonia and Latvia had long-standing non-aggression pacts with the Soviet Union. To further safeguard their security, they accepted Chancellor Hitler's offer of April 28 and on June 7 signed non-aggression treaties with the Reich. Yet no great trust was placed in either the Russian or German pledges. On June 23, the 22nd anniversary of Estonia's liberation from Russian domination, President Päts issued a patriotic appeal, declaring that "whosoever dares to violate our ancient country will meet our firm resistance." At the same time, to consolidate the government's position, he restored the military decorations and pension rights of 14 pro-Fascist opposition leaders who had lost their civil rights after the abortive revolutionary movement of 1933.

The Soviet Threat. Once Germany became involved in war with France and Britain and was no longer in a position to oppose Soviet ambitions in the Baltic, Moscow seized the opportunity to obtain by threat of force the concessions the little Baltic States had refused to grant voluntarily earlier in the year. Estonia was the first victim. Beginning September 19 the Moscow Government adopted a belligerent attitude. It accused Estonia of unneutral conduct in permitting the escape of an interned Polish submarine from the port of Tallinn. The little Estonian army was cowed by large Russian troop concentrations on the frontier and by threatening demonstrations of the Red Navy and air force. The Estonian Foreign Minister was called to Moscow and presented with demands that made Estonia a military ally of the Soviet Union.

Mutual Assistance Pact. After a week of negotiation, the Estonian Government capitulated and accepted the Soviet conditions. Subjected to diplomatic threats and to violent attacks from the

Russian broadcasting stations, the Estonians lived in hourly fear of invasion, but hesitated to order mobilization lest it provoke the expected Soviet attack. The crisis eased with the signature of a Soviet-Estonian mutual assistance pact on September 29. The significant articles of the pact follow:

I. The two contracting parties undertake to render each other every assistance, including military, in the event of direct aggression or menace of aggression arising on the part of any great European power against the sea frontiers of the contracting parties in the Baltic Sea or their land frontiers across the territory of the Latvian Republic, as well as against bases indicated in Article III.

II. The U.S.S.R. undertakes to render the Estonian Army assistance in armaments and other military equipment on favorable terms.

III. The Estonian Republic assures the Soviet Union the right to maintain naval bases and several airdromes for aviation on lease terms at a reasonable price on the Estonian islands of Saaremaa (Oesel), Hiiumaa (Dagoe) and in the town of Paldiski (Baltic Port).

The exact sites for bases and airdromes shall be allotted and their boundaries defined by mutual agreement. For the protection of the naval bases and airdromes the U.S.S.R. has the right to maintain at its own expense on the sites allotted for bases and airdromes Soviet land and air armed forces of strictly limited strength, their maximum numbers to be determined by special agreement.

IV. The two contracting parties undertake not to conclude any alliances nor participate in any coalitions directed against one of the contracting parties.

V. Realization of this pact should not affect in any extent the sovereign rights of the contracting parties, in particular their economic systems and State organization. The sites allotted for bases and airdromes (Article III) remain the territory of the Estonian Republic.

VI. This pact comes into force on the exchange of instruments of ratification. The exchange of these instruments shall take place in Tallinn within six days from the signature of this pact. The term of validity of this pact is ten years and if one of the contracting parties does not find it necessary to denounce this pact one year prior to expiration of its term, the pact shall automatically continue valid for the next five years.

The preamble of the treaty stated that it was "based on recognition of the independent state of existence and on non-intervention in the internal affairs of the other party." The treaty was ratified by the Estonian Government on October 4, one hour before expiration of the six-day time limit. A trade-balancing agreement, signed by the two countries on September 28, went into effect October 1. It provided for a possible increase in mutual trade to about \$4,600,000 for each country per year and gave each the right to ship goods through the territory of the other.

New Cabinet Formed. Before the Russian garrisons, estimated to total some 20,000 men, entered Estonia beginning October 18, the Estonian Cabinet resigned on October 10. The cause of the crisis was said to be Russian demands for additional air bases and increase of the garrison areas. The final protocol fixing the places and conditions under which Soviet troops were to occupy Estonian territory was signed on October 11. The next day a new cabinet was formed under Professor Juri Uluots, with Antonius Piip as Foreign Minister. Gen. Johan Laidoner, hero of the Estonian struggle for independence, remained commander-in-chief of the armed forces.

A fleet of 11 Soviet warships arrived at Tallinn October 15 and landed the first contingent of Soviet troops at Baltic Port. On October 18 other Red Army troops marched across the Estonian frontier to garrison the allotted seaboard bases. Installation of the Soviet forces was completed by October 20 in orderly and peaceful fashion. The Soviet troops, according to news correspondents, actively sought to win the good will of the Estonians. The latter gave them a formal welcome, but declined invitations to attend propaganda mov-

ies and lectures given by the Soviet garrisons. Many Estonians were employed by the Russians in constructing new barracks and repairing the old structures used by Czarist troops at some of the naval bases before the establishment of the Republic of Estonia.

Soviet-Estonian Difficulties. Difficulties resulting from the presence of Soviet garrisons increased in subsequent weeks. Encouraged by the presence of Russian troops, Estonian Communists resumed their political activities, forbidden by Estonian law. When arrested and imprisoned, they appealed to the Soviet garrison commanders for assistance, but this was refused. The small Russian minority in Estonia demanded special rights. Friction developed between the garrison authorities and the adjacent Estonian populations. On November 11 Estonian inhabitants of zones adjoining the Soviet garrisons were removed, apparently because of the desire of Soviet authorities to isolate their troops from anti-Communist propaganda. All foreigners were expelled from the localities of the Soviet garrisons and they were required to obtain permits to reside in other parts of Estonia. Early in December the Russians began to use their new Estonian bases to launch air raids and naval attacks upon Finland. This exposed Estonia to Finnish diplomatic protests, backed by the threat of retaliatory raids.

Relations between the Estonian and Russian Governments remained cordial up to the end of 1939, however. The anniversary of the Bolshevik Revolution was celebrated in Estonia for the first time on November 7. Early in December the Estonian army chief, General Laidoner, visited Moscow at the invitation of the Soviet Government and received flattering attentions. On returning, he announced that Moscow had offered to aid materially in strengthening the Estonian armed forces.

The Uluots Government. Meanwhile the new Estonian Cabinet had been seeking to strengthen its position against Communist and other internal enemies. Addressing Parliament on October 19 Premier Uluots announced various social reforms, including more provincial self-government and an increase in the general wage scale. On October 20 he said that although his government had sought to include all parties, some of them had refused their co-operation. Shortly afterwards the "state of emergency" in effect throughout the preceding year was prolonged until Sept. 12, 1940.

Departure of Balts. Before Russian troops entered Estonia and her sister Baltic States—Latvia and Lithuania—there was a hasty evacuation of Russian anti-Bolshevik refugees and various other groups that considered the mutual assistance pacts as the first step toward eventual sovietization of the Baltic countries. The largest and most important group to leave was the Balts—the German minority that had played an important economic, political, and social role in the Baltic countries for over 800 years. On October 7 the German Ministers to all three countries asked the three governments to arrange for the immediate transfer of the Balts to the Reich.

The 15,000 Balts in Estonia received the first word of their fate on October 7 when German ships arrived at Tallinn, Arendsburg, and Paernau for their evacuation. They were given 48 hours to decide whether to stay and face possible Bolshevik rule or accept German nationality. It was October 13, however, before the first shipload of emigrés sailed for Germany, after feverish at-

tempts to dispose of their properties. On October 15 a mixed Estonian-German commission reached an agreement whereby the emigrés' properties in Estonia were registered to the special account of the German Legation. The funds were to be transferred abroad in such a way as not to injure the Estonian balance of payments or economic life. The Estonian Balts owned estimated cash and deposits of \$1,250,000 and capital investments estimated at \$200,000,000. By this agreement Estonian nationals of German ancestry were given three months in which to cancel their Estonian citizenship and leave the country.

By the end of 1939 most of the Balts in Estonia had left for the conquered Polish territories of the Reich. Those who remained were expected to assimilate with the Estonians, giving up their language, schools and even changing their German names. This was done at the demand of both Estonia and the Soviet Union, both of which were anxious to remove any excuse for possible future German intervention on behalf of the remaining German minorities. There was Estonian-German friction over the sum to be paid in liquidating Baltic German properties and over the seizure of the Estonian steamer *Estonia* by a German warship on December 15. The ship was en route from Tallinn to Stockholm with 110 Poles, including many high officers.

Baltic Conference. Notwithstanding the changed status of the Baltic States, the Foreign Ministers of Estonia, Latvia, and Lithuania met in Tallinn on December 7-8 for the regular conference of the Baltic Entente. Their foreign policies, however, were now largely dictated by the Soviet Union.

See BALTIC ENTENTE; EUROPEAN WAR under *The Russian Front*; FINLAND, GERMANY, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*.

ESTROGENIC THERAPY. See MEDICINE AND SURGERY.

ETCHINGS. See PRINTS.

ETHIOPIA. A former native empire in East Africa, formally annexed by Italy on May 9, 1936, following its conquest by force of arms (see 1935 and 1936 YEAR BOOKS under ETHIOPIA). Area, about 347,500 square miles; population, roughly estimated at over 4,000,000. By the decree law of June 1, 1936, Ethiopia was incorporated with Eritrea and Italian Somaliland to form the colony of ITALIAN EAST AFRICA (q.v.).

EUGENICS SOCIETY, AMERICAN. A society incorporated in 1926 as successor to Eugenics Committee of the U.S.A., and Eugenics Society of the U.S.A. Its work is educational and is directed to improve human heredity so that in the future there will be fewer defective strains and an improved hereditary quality in all our people, by developing to their utmost all influences which may help to bring about a more eugenic distribution of births so that those parents, regardless of economic, racial, or regional grouping, who best provide the essentials necessary for the development of character and intelligence, being also those who on the whole pass on to their children a biological inheritance superior to the average of the nation, will have the major portion of the country's children. To this end the Society co-operates with agencies devoted to education, recreation, public health, religion, social service, and social readjustment in order to discover and promote measures by which each can make it easier for responsible parents in every class of society



COMMANDERS IN THE EUROPEAN WAR

Top, left to right: Gen. Franz Halder, Chief of German General Staff; Col. Gen. Wilhelm Keitel, German Chief of Staff; Gen. Maxime Weygand, French Commander of Allied forces in Near East. Center, left to right: Gen. Walther von Brauchitsch, Commander-in-Chief of German Army; Chancellor Hitler, Supreme Commander of the Reich's military forces; Admiral Erich Raeder, head of the German Navy; and Commodore Donitz, Chief of German submarine warfare. Bottom, left to right: Gen. Sir Edmund Ironside, Chief of the British Imperial General Staff; Gen. Gustave Marie Gamelin, Commander-in-Chief of the Anglo-French Armies and Chief of all French national defense forces; Gen. Alphonse Georges, French Chief of Staff; and General, The Viscount Gort, Commander-in-Chief of the British Army. Photos from *Brown Brothers* (top and center) and *Wide World* (bottom)



Wide World

FORTIFICATIONS ON WESTERN FRONT

Top: German soldiers working on tank traps and barbed wire and cable entanglements of the Westwall. *Center:* Rear entrance to a fort in France's Maginot Line, sheltered from enemy fire by the hill in the background. *Bottom:* The guns of the fort pictured above dominate approaches to the Maginot Line, criss-crossed with tank and barbed-wire barriers, such as those shown here

to have families of reasonable size without undue financial and social sacrifice.

The membership and regular mailing list of the Society numbers about 1500, including individuals and organizations. In January 1939 the Society published *American Eugenics Today* which is the most explicit statement of eugenic policy yet made by the Society. In March, 1939, the Society took over the publication of *Eugenical News*, now published quarterly under the direction of the following Editorial Committee: Robert C. Cook, Editor *The Journal of Heredity*, Robert Littell, Associate Editor, *Reader's Digest*, Frederick Osborn, Population Association of America, Albert E. Wiggam, Lecturer and Writer.

Total annual budget: \$8000 (\$3000-\$4000 from membership: \$3000-\$4000 from special contributions). Samuel J. Holmes, President; Mrs. Shepard Krech, Vice President; Frederick Osborn, Treasurer. The office address is 50 West 50th Street, New York City, Rudolf C. Bertheau, Secretary.

EUROPE. A continent with an area of about 2,094,500 square miles and a population estimated at 399,800,000 (excluding the U.S.S.R.) on Dec. 31, 1938. See separate article on each European country; also ARCHAEOLOGY, ARMAMENTS, COST OF; BALKAN ENTENTE, BALTIC ENTENTE, COMMUNISM, EUROPEAN WAR, FASCISM, MILITARY PROGRESS, NAVAL PROGRESS, ETC.

EUROPEAN ARCHITECTURE. See ARCHITECTURE.

EUROPEAN WAR. The European War of 1939 opened on September 1, as German Heinkel bombers dropped bombs upon Gdynia and other Polish towns and the German Army smashed across the Polish frontiers from North, South, and West. Two days later, Sunday, September 3, as the world listened to the radio, Great Britain accepted "the dreadful arbitrament of the sword" and France joined her Allies—Great Britain and Poland—in war against Germany. Thus "Der Tag" came to Europe for the second time within the memory of men still young, and for the second time within a quarter of a century men called it the start of a World War.

It was the most advertised, and probably the most dreaded, war in history. As early as the first days of August German factory owners near

ler's Germany—her entire system of life geared in peacetime to a wartime economy—had no tremendous transition to make from the peace that was no peace in the Europe of 1939 to the war that followed the German invasion of Poland. On land, sea, and in the air Germany was mobilized and ready for a quick war. Her industry, particularly her air industry, was not producing at maximum capacity at the end of August, but it was geared to a rapid increase in tempo. Her Regular Army, all its divisions at war strength and bolstered by S.S. [Elite Guard] and Reserve units, was massed along the Polish frontier; Landwehr units occupied the bunkers and casemates of the Westwall; Reserves were being organized and were in training throughout the country. The air force, with four *Luftflotten*, or air fleets, organized and equipped, was ready for instant large-scale action, while the navy, with perhaps 60 submarines in commission, three of the famous *Deutschland* class "pocket battle-ships," and the 26,000-ton *Scharnhorst* and *Gneisenau*, was equipped to play its role in the tragic drama that was to come.

In striking contrast to the German preparedness was the Allied unpreparedness. Poland had brought her 30 regular divisions up to full war strength by the end of August, but the order for general mobilization (a 60-day process) was not issued until a few hours before hostilities commenced. France had called extra classes and specialist reserves to the colors, and the Maginot Line was well manned by the "shell fish of the forts" (*écrevisses de rempart*), but France was in no sense on a war footing. Britain had mobilized her Reserve Fleet and taken other precautionary measures, but none of the Allied powers was so well prepared for instant war as were the Germans.

ARMIES

Country	Peace strength		Maximum war effectives	
	Divisions	Men (in thousands)	Divisions	Men (in thousands)
Russia	75-90	1,750	180-300	3,500-5,500
Germany	51-60	800-1,000	150-200	3,500
France	37	765	110-140	2,500
Poland	37	350-500	70	1,000
Finland	3	25	6-10	150-350
Britain	6-7	100-160	100?	1,200

AIR FORCES

Country	1st line planes (Sept. 1, 1939)	Reserve planes (Sept. 1, 1939)	Monthly production of planes		Monthly potential capacity (max)
			(Sept. 1, 1939)	(Jan. 1, 1940)	
Germany	3,500-5,500	2,000-3,000	700-1,100	1,500-2,000	2,500-3,000
Russia	3,000-5,000	1,500-2,500	200?	200?	300-500?
Britain	3,000-4,000	2,000-3,000	500-700	900-1,100	1,200-2,500
France	1,800-2,500	1,000-2,000	100-200	300-400	800-1,500
Poland	700-900	200-300	30-50		60
Finland	100-200	50	1	2	3-4

frontier points had been ordered to evacuate their stock piles and machinery into rear areas; in the industrial town of Aachen near the Belgian border even women and children had been warned to leave. A short time before hostilities opened (it was subsequently learned) from 20 to 30 German submarines passed out through the Kattegat and Skagerrak from the Baltic into the North Sea—and three Polish destroyers (the *Grom*, *Blyskawica*, and *Burza*) quietly left the Polish seaport and naval base of Gdynia—and joined the British Home Fleet in Scottish bases.

The Opposing Forces. Despite these warnings the opposing nations were not equally prepared for the conflict. The Third Reich of Hit-

NAVIES*

Country	Ships built (Sept. 1, 1939)		Ships building (Sept. 1, 1939)	
	No.	Tonnage	No.	Tonnage
Britain	329	1,381,308	86	670,225
France	173	530,327	65	270,431
Germany	120	242,072	67	272,799
Russia	180	215,000	52	80,000
Poland	9	13,210	1	990
Finland	7	9,628	..	.....

* The naval figures include all ships both new and old in the five principal categories—battleships and battle cruisers; aircraft carriers, cruisers, destroyers and submarines. Miscellaneous and auxiliary vessels such as torpedo boats, patrol boats, mine-sweepers, etc., which add a considerable additional tonnage, especially in the case of the British Navy, are not included.

The geographical position of Germany—the great mass of her territory interposing between strong England and France in the West and weak Poland in the East—gave her the advantage of what is known in military parlance as “interior lines.” Thus, although the Third Reich of Hitler like the Empire of the Kaiser, found itself, despite Bismarck’s warning, fighting on two fronts, the German *Wehrmacht*, taking advantage of its interior lines and the strong fortifications of the Westwall fronting France, moved swiftly to smash the weakest enemy, Poland. Its reservists in the West, from behind the steel and concrete fortifications of the Westwall, held off the slowly-gathering French forces, during the early days of the war, while the Reich’s major effort, delivered with the force of a sledge hammer and yet directed with the deftness and dexterity of a rapier-thrust, was to the East, with the obvious hope of achieving a quick conquest of Poland, and facing the world with a *fait accompli*.

THE POLISH CAMPAIGN

The resulting campaign against the Poles is known to the Germans as *Der Feldzug Der Achtzehn Tage* (The Campaign of the Eighteen Days), and to the world as the Nazi *Blitzkrieg*, while to army men everywhere it has already become a model of military precision, a classic of a kind to be studied and re-studied in years to come. No complete data as to the campaign were available from either side at the close of the year, but from official communiqués issued by both sides and verified press reports it can be approximately reconstructed.

German Forces and Plan. Zero hour, when the German troops crossed the Polish frontier, was 5:30 a.m., September 1. The German forces thrown against Poland were organized and commanded as follows:

Adolf Hitler—Der Führer, and Commander-in-Chief of all arms; Gen. Wilhelm Keitel, Chief of the Supreme Command of the Defense Forces (Chief of Staff to Hitler).

Land Forces

Gen. Walther von Brauchitsch, Commander-in-Chief of the Army; Gen. Franz Halder, Chief of the General Staff.

Northern Army Group of Two Armies: Gen. Fedor von Bock, Commanding; General Salmuth, Chief of Staff. The Fourth Army, Gen. Guenther von Kluge, Army Commander. The Third Army, General von Kuchler, Army Commander.

Southern Army Group of Three Armies: Gen. Gerd von Runstedt, Commanding; General von Manstein, Chief of Staff. The Tenth Army, Gen. Walther von Reichenau, Army Commander. The Fourteenth Army, Gen. Wilhelm List, Army Commander. The Eighth Army, Gen. Johannes Blaskowitz, Army Commander.

Total Land Forces: 35 to 55 infantry divisions (division strength—15,224 officers and men); 4 to 6 light divisions (motorized infantry, plus tanks, etc.); 4 to 6 *Panzerdivisionen* (armored division—strength about 11,000 men, plus 425 light tanks); 2 to 3 mountain divisions; 1 cavalry brigade; Condor Legion (specially organized veterans of Spanish Civil War); S.S. troops; miscellaneous units; total—900,000 to 1,200,000 men.

Air Forces

Field Marshal Hermann Goering, Commander-in-Chief; General Jeschonnek, Chief of Staff. Air Fleet #1 (Re-enforced), Gen. Albert Kesselring, Commanding. Air Fleet #4 (Re-enforced), General Lohr, Commanding. Total—1200 to 2500 planes.

Naval Forces

Adm. Erich Raeder, Commander-in-Chief; special naval forces in Danzig Bay, Adm. Conrad Albrecht, commanding. Two second-class battleships, *Schleswig-Holstein* and *Schlesien*; minesweepers, destroyers, torpedo boats and small craft.

Fortifications

Fortified zone around Frankfurt-am-Oder, local and coastal fortifications at Königsburg (East Prussia).

The German plan of campaign was simple. Poland, 1240 miles of her borders enclosed between the pincer-like jaws of the German state, was to be overrun from three directions. The planes of the air force from bases in Pomerania, Schlesien, Slovakia, and East Prussia were to shuttle back and forth across Poland bombing and machine-gunning intensively; the naval forces were to launch an assault from the Baltic against Danzig, the Polish Westerplatte munitions base in Danzig harbor, Gdynia, the fortified peninsula of Hel and the little strip of Polish coast; and the army, upon which the burden of victory was principally to rest, was to thrust deeply into Poland, using on a grand scale the favorite German outflanking tactics—the classic double envelopment, first brilliantly demonstrated by Hannibal at the Battle of Cannae 2000 years ago. The two army groups, one driving from the north, the other from the south, were to encircle Warsaw in an attempt to bar the retreat to the East of the main Polish forces and to surround and destroy them. Any Polish detachments which escaped this net were to be surrounded later by an even more sweeping operation—the northern and southern pincers of which were to be joined behind the San and the Bug Rivers. The German center—in front of the Poznan salient—was purposely held but weakly by frontier detachments who were backed up, however, by the Frankfurt fortified zone.

Polish Forces. The Polish forces that opposed these thrusts were organized as follows:

Marshal Edward Smigly-Rydz, Inspector General of the army and ostensible dictator, Commander-in-Chief; Gen. J. Stachiewicz, Chief of Staff.

Land Forces

Northern Army Group; Central Army Group; Southern Army Group; miscellaneous and detached units and units in process of organization and mobilization.

Total Mobilized: About 30 infantry divisions (division strength, 12,000); 14 cavalry brigades; miscellaneous and attached units—500,000 men. Total additional in process of mobilization: 30 infantry divisions—500,000 men.

Air Forces

Regular Polish Air Force of 700 to 900 planes, based at Okęcie (Warsaw); Lublin, Deblin, Brest Litovsk, Tezeu, Grudziadz, Mława, Katowice, Krakau, Vilna, Gdynia, Posnan, etc.

Naval Forces

Four destroyers; four submarines; one minelayer; and light craft based on Gdynia.

Fortifications

Main pillbox line in front of Upper Silesian industrial area from north of Czeszochowa to Katowice. Another pillbox line on the south bank of the Narew near Lomza and Nowogrod. Strong coastal and land fortifications at Gdynia, Peninsula of Hel, Westerplatte. Fortresses at Modlin, Przemysl, Brest Litovsk. Local fortifications (mostly field fortifications) and local defense lines along Brahe River, Warta River, Posen, Lodz, Warsaw, Mława, Bydgoszcz, Grudziadz, Lwow. None of the fortifications in any sense comparable to French Maginot Line, or German Westwall.

The Polish plan of campaign is not yet clear—may never be completely clear—since most of the leaders responsible for its conception and execution are either dead, wounded, captives, or in exile or internment. Enough is known, however, to indicate with considerable authority that the advice of the French Military Mission at Warsaw and of British officers there was apparently discarded. Allied advisers strongly suggested that

it would be impossible for the Polish armies to hold off the invaders near the strategically indefensible Polish frontiers, and urged that delaying actions only be fought in the western part of the country, and that the main line of resistance be established behind the traditional Polish defensive triangle—the line of the Vistula, Narew and Bug Rivers, which join near Warsaw.

It is not difficult to understand, in the light of Poland's past history, why the Allied advice was apparently ignored. Josef Beck, Polish Foreign Minister, had long been notoriously anti-French. And, ever since 1920 when Gen. Maxime Weygand, now commander of the French forces in the Near East, had aided Marshal Pilsudski, Polish national hero, to win the Battle of the Vistula in the Polish-Bolshevist wars—and had received in the eyes of the world major credit for the resultant victory—there had been an obvious undercurrent in the Polish Army which set strongly against France (due, in large part, to the sensitive Polish national pride).

In any case the aftermath showed rather clearly that the Polish plan of campaign envisaged more than delaying actions west of the Vistula. For the bulk of the Polish army was apparently concentrated west of the Vistula when hostilities started, with a part of the Northern Army Group in the Corridor, and another part North of Warsaw. The bulk of the Central Group—strongest of the three groups—was apparently somewhat north of Lodz, between Poznan and Kutno; while the Southern armies guarded the Upper Silesian industrial area, with the main strength concentrated between Krakau (Cracow) and Lwow.

According to the official German account of the campaign the mission of the Northern Polish soldiers was to secure Danzig, and later, assisted by reserve divisions being mobilized in Eastern Poland (near Bialystok, Augustow and Suwalki), to launch an attack from three sides against East Prussia, thus eliminating this German "island."

To the Poles such an operation might indeed have seemed entirely practicable, since they professed to believe until the last that German offensive military operations from East Prussia as a base were impossible, a belief which proved to be one of the fatal miscalculations of the campaign.

The Central Army Group, intended as a strong centrally-located army of maneuver, could, it was thought, pivot and wheel in any direction to meet a German threat and would offer protection to the flank of the invading Northern group, while at the same time threatening the flank of any German Army advancing against the Corridor. The Southern Group was intended to hold, as long as possible, the exposed Upper Silesian area, and then to secure the newly-developed "industrial triangle," the so-called *Centralny Okreg Przemyslowy*, situated near Sandomierz between the valleys of the Vistula and San Rivers.

Operations. The German land assault, starting the morning of September 1, was accompanied and preceded by what was probably the most intensive use of air power in history. German planes shuttled back and forth across Poland day after day and night after night; their first objectives the weak Polish air force itself, its fields, gasoline supplies, and factories. That air force, its fields, hangars, and planes bombed and destroyed, its fighters shot out of the skies, many

of its planes badly handled or handled scarcely at all, was quickly eliminated as an active factor in the campaign, and the German Heinkel and Dornier bombers turned their attention to railroads, stations, bridges, roads, lines of communication, to the concentration areas of the Polish reserve divisions, and eventually, to cities and towns. In less than a week since the first German bombs dropped without warning in the preliminary surprise raids on Gdynia, Krakau, Katowice, and other Polish cities early on the morning of September 1, more than 60 towns and cities as far east as Brest Litovsk were bombed by Germany's roaring armadas.

The importance, therefore, of the air arm in the German *Blitzkrieg* cannot be overemphasized. It severed Polish communication and transportation lines; it hampered or prevented mobilization of reserve units; aided by an efficiently-organized ground intelligence and espionage service and by ground reconnaissance units, it detected and reported to GHQ every concentration of Polish troops, no matter how small; it extended the long arm of war over the entire Polish countryside; it weakened Polish morale; it blinded, harried, confused and disrupted the Polish army and the Polish nation. The planes were used both strategically and tactically—strategically for attacks on distant objectives such as those outlined above; tactically, in closer co-operation with the German ground forces for assaults upon Polish fortifications, artillery emplacements and rear areas. It extended the range of the artillery; strafed ground troops and aided a "break-through" of trench systems and fortifications. The air arm assisted materially in turning defeats into routs, and was an essential ingredient in the German formula for *Blitzkrieg*.

But the gasoline engine on the ground, no less than the gasoline engine in the air, contributed most importantly to that victory. With no major terrain obstacle confronting them until the Vistula was reached, with the flat level plains of Poland hard-baked by the suns of summer, the Germans utilized mechanized and motorized forces extensively and daringly. Correctly calculating the inferior caliber of the leadership, equipment, and training of the Polish forces, the Germans did not hesitate to expose some of their advanced units to risks which could not safely have been assumed against a first class opponent. Their basic tactics were simple—the tactics of encirclement; but their methods, in speed and coordination, were surprisingly effective.

The most applicable analogy is, perhaps, to liken the German advance to the action of the waves of an incoming tide upon a beach. As the waves gradually lick up the beach they encounter hills or domes of sand—citadels of resistance. Part of the water eats away frontally at these isolated citadels; the rest of it rushes, with the force and speed of a torrent, seeking the lines of least resistance, through the valleys and low places, sweeping around in a foaming cascade of white to the rear of the "citadels" of sand, encircling them, lapping away at their flanks and sides until finally the structure, assaulted from all sides, collapses. So did the German Army move into Poland, using on a grand scale and with mechanized modifications the "infiltration" tactics it devised during the World War. As its infantry divisions came up against the few Polish pillboxes, or against determined Polish resistance and artillery was brought into position

to aid the infantry in blasting a way through, the German armored and light divisions reached out toward the Polish flanks, seeking soft spots in the enemy line, seeking the paths of least resistance, and once found, broke through, to surge upon the enemy's flanks and into his rear areas. It was a process a hundred times repeated, a perpetual process of outflanking and envelopment, which broke the Polish resistance up into relatively small and isolated fragments, which were destroyed piecemeal.

Mobility was the keynote of the lightning war; the Polish campaign was a war of maneuver, a war of movement which never became static or immobilized. Against such rapidity of movement, against the speed of the German armored and motorized units which fanned out across the flat Polish countryside, driving up all the roads, rumbling cross country deep into the enemy's rear areas, the plodding Polish infantry, even the dashing Polish cavalry (which, armed with the obsolete lance and the saber still employed the picturesque but pitiful tactics of *Balaklava*) were helpless.

A handful of Polish cavalymen scored initial but short-lived successes (the only Polish successes of the brief campaign) when they advanced against little opposition a short distance across the German frontier in the weakly-held Posnan area and also in East Prussia. But Armageddon had started; these cavalymen, flushed with "victory," were soon struck down in the avalanche that brought death and disaster to their country.

The lack of adequate anti-tank equipment, the failure of the Polish high command to have adequate field fortifications prepared, or an adequate main line of resistance laid out, the failure to provide satisfactory road blocks or tank traps, the total collapse, under the first smashing blows of the *Blitzkrieg*, of the Polish radio, and other communications—all materially facilitated the German operations. The Poles, blinded, cut up, confused, never knew the true situation; were rarely accurately informed of the German positions or movements; the Germans, on the other hand were kept constantly informed of every Polish movement. The result was inevitable; not only field officers but division and army commanders were captured with their entire staffs and often with a major part of their commands. After the first week of war the issue was never in doubt.

Danzig Occupied. As the *Schleswig-Holstein* opened the ball by bombarding the Westerschelde in Danzig Harbor and Storm troopers and soldiers from East Prussia took over the Danzig Free State with but sporadic and short-lived opposition, von Kluge's Fourth Army—part of the Northern Army Group—pushed into the Polish Corridor from Pomerania in the general direction of Bydgoszcz (Bromberg) and Grudziadz (Graudenz). Its mission was to force a crossing of the Vistula between those two towns and to establish connection with the right wing of von Kuchler's Third Army which drove southward from East Prussia in the general direction of Chelmno. At the same time the main body of the Third Army attacked due south in the general direction Allenstein-Mlawa-Warsaw while this army's left flank extended as far eastward as Lomza. It was the mission of this army to force crossings of the Narew and the Bug Rivers, and to effect a juncture to the east of War-

saw with von Reichenau's Tenth Army, one of the three armies in the German Southern Army Group.

Simultaneously large-scale assaults over a great part of Poland's southwestern frontier were made by the Southern Army Group's three armies. von Reichenau's army, in the center, advanced in the general northeasterly direction Kreuzberg-Warsaw; while on von Reichenau's left flank, the Eighth Army of General Blaskowitz pushed from east of Breslau in the general direction of Lodz. In the extreme southwest, where List's Fourteenth Army extended around the Polish frontier into Moravia and Slovakia the attack was made in two directions, the left flank striking toward Katowice and the lower industrial area from Breslau and Gleiwitz, the center in the general direction of Krakau (Cracow) and the headwaters of the Vistula, and the right flank, assisted by Austrian and Slovakian troops and mountain divisions, driving from the south north and northeastwards through Jablunka Pass in the Western Beskids (part of the Carpathian range), and then, after establishing liaison with the German troops advancing from Silesia, turning to the east and pushing toward Sucha and Neumarkt and on through the foothills on the Polish side of the Carpathian range. A small detachment, operating on the extreme German right flank, later pushed through the Dukla Pass to join the main drive.

These operations, nicely articulated although conducted by widely separated forces, were designed to pinch off the Corridor in the north, the Silesian industrial area in the south and thence to swing wide the pincers of steel around Warsaw and the bulk of the Polish Army. In these objectives the Germans were everywhere and speedily successful.

Polish Corridor Cut. By the end of the second day of war, the Corridor had been practically nipped off by the forces converging from Pomerania and East Prussia; the Fourth Army's Pomeranian and Brandenburg infantry broke through the Polish Brahe River lines; the Third Army, pushing southwards from East Prussia reached Mlawa; the Southern Army Group was battering at the pillboxes and bunkers in front of the Upper Silesian industrial area and mountain divisions had forced a passage through the Jablunka Pass; and had reached a line between Neumarkt and Sucha. The local fortifications of Bydgoszcz and Grudziadz at the base of the Corridor were stormed the next day (September 3); the Polish strip of seacoast, already besieged from the sea, was rapidly invested from the land; and the mopping up of Polish troops in the Corridor (including a cavalry brigade and one or more infantry divisions) commenced. (This action, known as the "Battle of Tuchola Heath," resulted in the destruction of Polish forces, about 15,000 strong.)

Polish fortress troops in the southern pillbox line put up for a few hours a stiff resistance to a frontal assault by the Condor Legion, but as German mechanized units filtered through weak spots in the line and fanned out around the flanks of the fortified area, this early resistance quickly collapsed; a few units of the Southern Polish Army group near the frontier were quickly captured or destroyed or retired rapidly in a retreat that soon became a rout. By September 5, German armies had taken most of the Upper Silesian industrial district; a day later they had taken

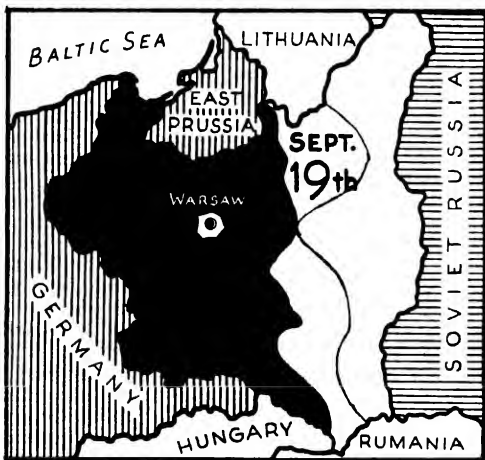
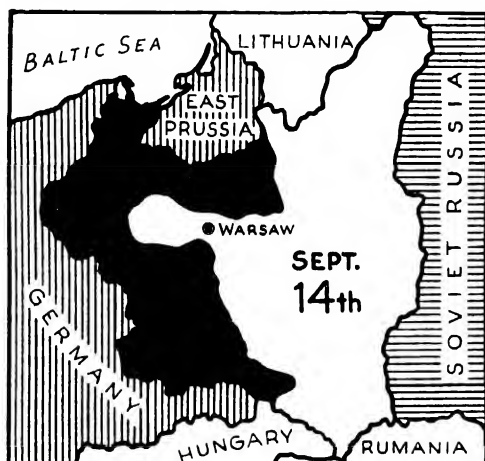
Krakau, ancient "heart of Poland," while the Eighth Army, with the Tenth on its right flank, had brushed back the Polish delaying forces east of Breslau; had forced a crossing of the Polish defense line (strengthened by pillboxes) on the Warthe River and were stabbing at the textile town of Lodz, while the Northern Armies had driven south from East Prussia within 21 miles of Warsaw.

Day after day mechanized and motorized spearheads were driven deeper and deeper into Poland, while behind the motorized detachments came the German infantry, fighting their way in an advance remarkable for its speed.

German Pincers Close. The first five days were—in the unmilitary vernacular of the streets—the "pay-off"; and by September 8 the Polish campaign had been, to all intents and purposes, decided. By this date, the great reaching pincers had already started to close about Warsaw, and part of a German armored division actually forced its way into the Polish capital, though it quickly withdrew (part of the Tenth Army, which fought its way 140 miles within a week).

The great bulk of the Polish Army was virtually trapped west of the Vistula; the German Third Army, driving south from East Prussia, had, after some hours of delay caused by the Polish fortifications along the Narew forced a passage of this river and an advance detachment had secured a bridgehead across the Bug at Wyszki; while List's Fourteenth Army in the south was rolling rapidly eastward toward the fortress of Przemyśl and Lwow, and units of the Fourteenth and Tenth Armies had crossed the Vistula; turned the southern flank of the Vistula Line; and had taken Sandomierz, heart of the industrial triangle, to add to the rich prize of the Upper Silesian coal, iron, zinc, and industrial area.

The rapid encircling movements of the German forces and the deep mechanized spearheads thrust into the country had already resulted in surrounding, destroying or capturing large Polish detachments; some divisions had already been completely broken up and thousands of Polish troops had surrendered, while very sizeable forces were surrounded—their backs to the Vistula—



Life Magazine

THE CONQUEST OF POLAND

The rapid advance of the German armies is shown in black on this series of maps. The progress of the Russian invasion from September 17 to September 19 is indicated by the black line on the final map of the series

by Reichenau's Tenth Army at Radom. (This battle was fought north of the Lysa Gora hills between Radom, Zwolen and the Vistula.)

Thus, within little more than a week of war both of Poland's principal industrial areas had fallen within enemy hands; the traditional defensive line of the Vistula and the Bug had been turned from north and south; the bulk of the Polish Army was virtually trapped west of the Vistula and a nation of 30,000,000 people, into whose re-creation had gone the blood and sweat and agony, the hopes and cherished dreams of Pilsudski and his Legions, Paderewski, and his friends of intellect and heart, was almost conquered.

Yet the Poles fought on—blindly most of them, in isolated units, cut off from each other, knowing nothing of the course of the campaign, believing, some of them, that the "English are coming"; that East Prussia had been overrun; that Polish troops were marching toward Berlin. Some did not believe this; even before defeat was complete the Polish Government and Smigly-Rydz left Warsaw, the threatened capital, on September 6 and while fighting was still in progress crossed into Rumania, internment and obscurity eleven days later. The Polish soldiers died bravely, and some few of the units—particularly one or two of the cavalry brigades (judging from the incomplete accounts available)—did effective work.

But against the onrushing German tide these units were no more adequate than Mrs. Partington's mop; they melted away under the German hammerings and the end was not far.

Battle of the Bzura. By September 14, the Polish forces surrounded at Radom, estimated by the Germans at more than four divisions of 60,000 men had "ceased to exist" (i.e. had been killed or had been taken prisoner). Warsaw and the fortress of Modlin had been almost completely cut off; reaching fingers of steel were grasping toward Lwow and Brest Litovsk; the second and wide-sweeping pincer movement contemplated by the German plan had started, and major elements of the German Third, Fourth, Eighth, and Tenth Armies, commanded by General von Runstedt, had formed a great pocket around the bulk of the trapped Polish army, forced together and compressed into the "bend of the Vistula" in an area west of Warsaw, east of Posen, centering around Kutno, between the Bzura River and the Vistula.

Around the Bzura took place the major battle of the campaign, and while battered and embattled Warsaw sent to the world via its remaining radio station plaintive appeals for aid and the first delicate notes of Chopin's "Polonaise," the Germans proceeded to tighten the steel ring and to repulse every effort of the large Polish forces to break through. The battle of the Bzura, gradually waned between September 17 and September 20, after a ten-day struggle in which the German ring of steel tightened inexorably around several hundred thousand Polish troops. The Germans claimed more than 300,000 prisoners from this one action alone, as well as a vast quantity of war materials, and the Polish General Bortnowski and his entire staff was captured in the Bzura River marshes.

Fall of Warsaw. Simultaneously with this battle other German troops completed the encirclement and isolation of Warsaw and Modlin; took the fortress of Przemyśl in the south; captured

or destroyed the Polish southern army; besieged Lwow in the south; captured Brest Litovsk in the north, and Gdynia on the seacoast and units of Germany's northern and southern army groups joined hands at Wlodawa far behind the Vistula on September 16, having fought and marched their way some 200 to 400 miles across a hostile country in 16 days.

The Polish campaign was over, but Warsaw endured, burning, battered, bloody but unbowed, until—hundreds of its buildings gutted or ruined, its dead buried in the parks, the capital of Poland surrendered unconditionally on September 27, and its garrison of almost 100,000 (soldiers swollen by reservists and civilians) became German prisoners of war. The fortress of Modlin surrendered the next day, and the fortified peninsula of Hel, near Gdynia, which held out until October 1 was the last "island" of Polish soil, where organized resistance continued.

Soviet Intervention. As the Battle of the Bzura was ending and after the conquest of Poland was virtually complete, the armies of Soviet Russia—perhaps 500,000 strong—marched westward at 4 a.m. on September 17 across the Polish eastern border (obviously by prearrangement with the Germans) and advancing through White Russia in the north and the Ukraine in the south, pushed toward the furthermost outposts of the German advance. The German *Blitzkrieg* had been so rapid, so devastating and so complete that any prospect of continued organized resistance from the Poles had gone before the Russians moved across the frontier. But the Russian "stab in the back," as the Poles describe it, did, undoubtedly, completely eliminate any hopes the Poles may have entertained of commencing an effective guerrilla warfare from bases in the Carpathians and the fastnesses of the Pripet Marshes.

Polish resistance to this new and unexpected assault was naturally sporadic and feeble. The Russians sent some of their motorized units and tanks rumbling ahead of their main forces deep into Poland, but the bulk of the Soviet invaders plodded along in the traditionally slow but ponderous fashion of the Czarist armies. The Russian "procession"—(it could scarcely be dignified by the term "invasion," since the resistance offered by a couple of Polish divisions and a couple of cavalry brigades was in no sense commensurate with the strength of the Russian forces)—moved, in the north, toward Wilno (Vilna) (which they took on September 19); Grodno (taken on the 20th) and in the direction Baranowicz-Bialystok, while another force, skirting the Pripet Marshes, curved to the south toward Brest Litovsk, where a conference between the German and Russian high commands was subsequently held to decide the details of Poland's fourth partitionment. In the south Russian forces moved toward Wlodzimierz, Lwow (where they relieved German troops engaged in siege operations and took the city September 19), Stanislaw and toward the Rumanian frontier and quickly cut the Polish-Rumanian railroad line, thus entrapping a considerable number of Polish forces which had been retreating before the German advance.

A large number of Polish forces, however, including most of the Government officials and a number of high-ranking generals, succeeded in escaping to Rumania, as did a considerable number of civilian refugees. Other thousands were

interned in Lithuania, and several score Polish planes which had escaped destruction were interned in Rumania and Lithuania. Many of the Polish officers and refugees subsequently made their way to France, where the Polish "Government without a country" was completely reorganized, and a new Polish Army was formed to assist the French and British on the Western Front.

At subsequent conferences in Moscow and elsewhere, the German-Russian border, originally fixed along the Vistula, was altered to run from Lithuania along the Narew, the Bug and the San to the Hungarian frontier, and although isolated Polish groups—unaware of the tragic end of their country—still fought sporadically—against the Russians in the fastnesses and swamps of the Pripet Marshes, against the Germans in the forests and mountains of the south—all organized resistance was completely crushed before the end of September, and the world's first modern *Blitzkrieg* was ended.

It was an achievement, remarkable not alone because of the tremendous efficiency of the German military machine, an efficiency which probably stamped the German Army immediately as the best "short-war" army in the world, but also because of the remarkable inefficiency of the Polish defense forces. Poland was in reality a "dictatorship without a dictator" ruled by a "clique of colonels"; the Polish army was deficient in all but courage, and courage, in modern war, is not enough.

CASUALTIES OF THE POLISH CAMPAIGN

German

Dead—10,572. Wounded—30,322. Prisoners and Missing—3404. (Figures as given by Hitler up to September 30; probably incomplete). Planes lost—200 to 500. Naval losses—none.

Polish

Complete data may never be available. The entire Polish mobilized army of about 500,000 men was wiped out—killed, wounded, captured, missing or interned. Other partially mobilized units were also completely broken up. The Germans claimed 700,000 prisoners; and it is likely that the Poles lost from 50,000 to 100,000 killed in addition to heavy civilian casualties from bombings and artillery bombardment. The Polish air force was destroyed, and of the 77 light units of the Polish Navy only about five—the three modern destroyers *Grom* (Thunder), *Blyskawica* (Lightning) and *Burza* (Storm), which left the Baltic before war started, and two Polish submarines, the *Wilk* and the *Orzel*, which escaped after hostilities commenced—survived the debacle to serve with the British Navy.

Russian

No accurate data available, but casualties believed extremely light; probably less than 2000 in all categories. Some Russian soldiers were killed in clashes with the Germans. Perhaps 5 to 50 planes lost.

See POLAND under *History*.

THE WESTERN FRONT

As Poland was dying the Western Allies—France and Britain—were mustering their strength for a struggle with the military might of Germany.

On land, operations in the West were immediately restricted, not only by difficult terrain and the crowding borders of neutral states—Switzerland, Belgium, Holland, and tiny Luxemburg, but also by two tremendous lines of fortifications—the French Maginot Line, and the German Westwall—both consisting of tank traps, trenches, barbed wire, pillboxes, casemates, and great steel-and-concrete fortifications extending deep into the earth. The Maginot Line, at the

outbreak of war reached from the Channel to Switzerland, with an extended spur along the crest of the Juras as far south as Lake Geneva. That section of the line opposite Belgium, situated in unfavorable terrain, was not, however, as strong as that tremendous fortified zone which guarded the route of direct invasion into France—the Maginot Line proper, between Belgium and the Rhine at Lauterbourg. The German Westwall, recently built, had not been completely finished when hostilities commenced, but the main part of the fortified zone between Trier on the Moselle and Karlsruhe near the Rhine and thence southwards through the Black Forest to Switzerland was well-nigh ready. Work on those parts of the line which extended as far north as the Dutch frontier was continued during the early months of hostilities and concrete was poured even as close to the fighting front as Trier and at the Istein fortresses north of Basle, Switzerland.

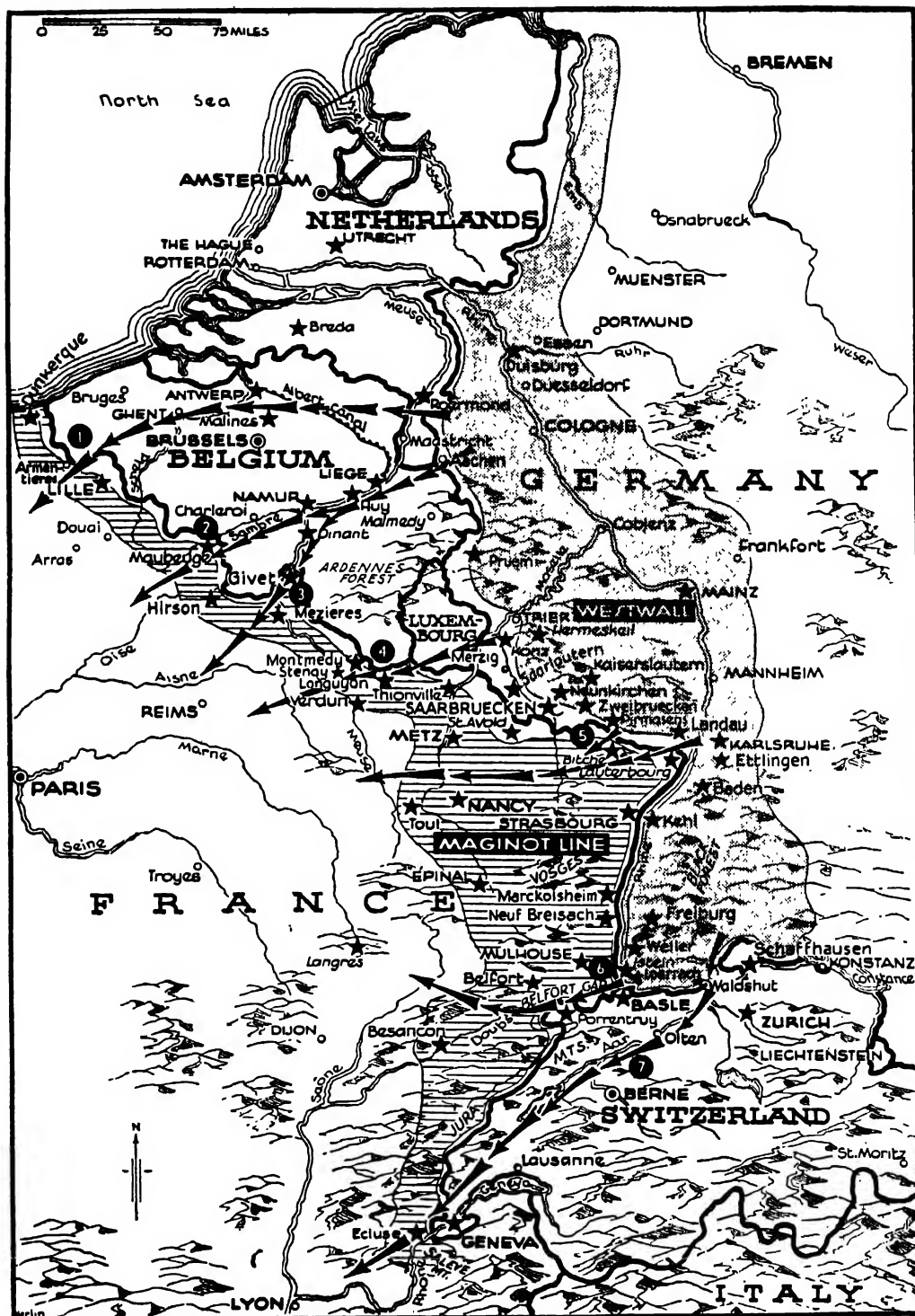
French Advance. Behind the cover of these vast lines the man power of the warring nations was mobilized. France set its somewhat cumbersome 21-day mobilization machinery into operation as its frontier cities and towns were evacuated and Britain prepared to send an expeditionary force to the continent, as Marshal Maurice-Gustave Gamelin, generalissimo of the Allied land forces, gave General Alphonse Georges, commanding the French field forces, orders to launch a diversion offensive intended to divert German troops from the Eastern Front and relieve the pressure upon hard-pressed Poland.

This offensive was cautious in the extreme; its lack of vigor may be explained in part by the fact that France was incompletely mobilized, by the time required to concentrate heavy and medium artillery near the zone of operations, by the memories of the World War with its wholesale bloody sacrifices; by French tactical doctrine, which has never adapted itself to a *Blitzkrieg* concept but is rather adjusted to the cautious, finely co-ordinated advance; by an announced desire for economy of life, and by the healthy French respect for the German Westwall.

In any case, the French diversion offensive was never really a large-scale co-ordinated offensive, but rather a series of local actions, which developed from reconnaissance in force, outpost and advanced guard bickerings, to local offensives. All of the French operations were restricted to that portion of the 110-mile German frontier between the Rhine and the Moselle; that section of the German-French frontier between Lauterbourg and Basle which has the River Rhine as its demarcation line, was, and has remained, quiescent.

The principal French effort was directed in the general direction of the 738-square mile German Saar, that rich mining and industrial area which lies squarely upon the French frontier, with its key city, Saarbrücken, on the border. Early French efforts were devoted to "feeling out" the "No-Man's Land" which lay between the Maginot Line and the Westwall, and to eliminating the geographical salients formed by the twisting frontier line. To this end, operations to the east and west of Saarbrücken were pressed most vigorously with local action as far west as Perl on the Moselle, and with the French probing deeply into the Bienwald in the Haardt Mountain Range, on the extreme east of the line.

These probing operations resulted in a slow



Courtesy of New York Times

THE WESTERN FRONT

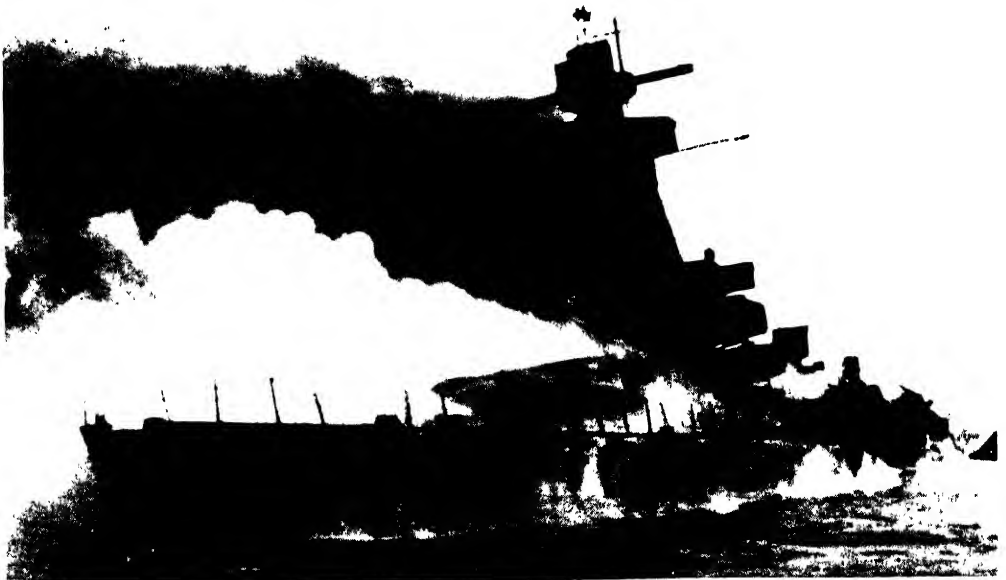
Shown on this map are the major defense positions of the Western Front. They are indicated by stars. The arrows indicate the possible lines of German invasion where there is favorable terrain. They are (1) The Armentieres Gap; (2) Oise Gap; (3) Meuse Gap; (4) Montmedy; (5) Bitche Gap; (6) Belfort Gap; (7) Through Switzerland along the Aar River



Wide World



Wide World



Brown Brothers

THE WAR AT SEA

Top: A convoy of Allied and neutral merchant vessels, guarded by British war-ships, off the British coast. *Center:* The German liner *Columbus*, set afire and scuttled by its crew 450 miles east of Cape May, N. J., on Dec. 19, 1939, to prevent its capture by a British warship. *Bottom:* The German pocket battleship, *Admiral Graf Spee*, scuttled on Hitler's orders in the estuary of the Rio de la Plata Dec. 17, 1939, after being forced to leave the harbor of Montevideo, Uruguay, where it was driven by three British cruisers in a sea battle on December 13.

and extremely cautious French advance, an advance which was opposed vigorously and yet without undue risk by the German Landwehr and reserve divisions, (bolstered by some regulars) who at first composed the bulk of the German troops on the Western Front. Land mines in profusion, tank traps, machine gun nests, and other obstacles, as well as the rolling, wooded nature of the terrain hampered the French advance. By the third week in September, about the time French mobilization was completed, this process had resulted in the establishment of a French outpost line—between the Rhine and the Moselle—most of which was on German territory, but which had not yet abutted squarely upon the first main line of resistance of the Westwall. The serrated line of the furthest French advance extended about as follows: From Luxemburg north of Perl, through the southern outskirts of Wehingen, north of Schwerdorf and Heining, roughly a short distance south of the south bank of the Saar through the middle of the Warndt Forest south of the outskirts of Saarbrücken, to Spichern to Ohrental, south of Hornbach, north of Schweiz, through the Bienwald on the right of the line to the Rhine.

Most of this line—which was in no sense the French advanced main line of resistance, but rather an outpost line—was on German soil. The maximum penetration of Germany was as follows:

In the Lauter sector, on a 15-mile front, one mile penetration into the Bienwald.

In the Haardt Forest, on a 20-mile front a two-mile penetration.

In the Hornbach sector on a 20-mile front a two-mile penetration in the direction of the towns of Pirmasens and Zweibrücken.

In the Saarbrücken sector, on a 15-mile front (the most active sector) a penetration of from $\frac{1}{2}$ of a mile to $1\frac{1}{4}$ miles.

In the Warndt sector on a 15-mile front, an eight-mile penetration into the Warndt Forest.

In the Nied sector, on a 20-mile front, a $2\frac{1}{2}$ mile penetration in the direction of the town of Saarlautern.

In the Moselle sector, on a 15-mile front, a three-mile penetration.

This advance never involved an offensive on a large scale, such as those to which the public became accustomed during the World War, but rather careful infiltration tactics, supplemented when the German resistance stiffened, by tanks—some of them the famous French "heavies" of 70 to 90 tons. Horsed cavalry was also used on both offense and defense for patrol and reconnaissance purposes.

The French advance forced the evacuation of a number of German border towns, and Saarbrücken was for long a dead city. Bubingen, Kleinblittersdorf, Bliesransbach, Bebelshheim, Bliesmengen, and Auersmacher, sites of some of the richest Saar coal mine pitheads, were also reported evacuated and, there seems little doubt that mining and industrial activity in the Saar was materially reduced during the first six to eight weeks of war. On the other hand the French failed to capture any of the important parts of the Saar area; none of the major industrial centers was damaged either by shellfire or bombs; Saarbrücken, though for a time apparently within range of even light field artillery, was virtually unscarred, and the relative feebleness of the French advance, a feebleness attributable both

to lack of preparation for instant large-scale war and to a certain indecision in planning, contributed to the failure of the offensive.

But even a more vigorous offensive in the West in the first two weeks of war could not have saved the Poles, for as a study of the Polish campaign has shown, the German advance in the East was too rapid and devastating to be withstood. But whether or not capture or destruction of part of the industrial areas of the Saar might not have been a considerable contribution to the winning of the war for the Allies is a different question.

In any case, the French diversion offensive failed to divert—at least in time to help Poland. Germany actually commenced to transfer troops from East to West probably in the middle of September, certainly the Westwall divisions were considerably re-enforced by that date. And by September 21 masses of German troops from conquered Poland were being shifted to the West.

The French offensive, therefore, immediately bogged down. With Poland conquered a diversion offensive was pointless, and with the Westwall strongly manned by great masses of seasoned troops who actually outnumbered the effectives France could put into the front lines, a large-scale offensive of any sort was now extremely hazardous. France, therefore wisely assumed the strategic defensive, and by October 3, she had withdrawn her troops to a main defense line which ran almost entirely on French soil, but in front of the Maginot Line proper, leaving only the French outpost line—lightly held, within Germany. And soon the proud statements in the Paris press which accompanied the early and short-lived offensive—that "not a single German stands on French soil"—was to be contradicted.

German Offensive. For the Germans, in turn began a cautious advance, preceded by intensive patrol activity and artillery ranging early in October, and pushed back the small French outposts all along the line from the Rhine to the Moselle. Only in two instances—one east of the Moselle River on a four-mile front, where the French resistance was stiffer, and another in the Saarbrücken-Zweibrücken-Pirmasens sector—were offensives on any scale at all commensurate with the World War attempted. Three or four divisions were probably used in the first to overcome fairly stiff French resistance, and it was estimated that perhaps as many as 100,000 men or 8 to 15 divisions had been used in the second. The French, however, fell back to their previously prepared main line of resistance without making serious attempts to hold their earlier territorial gains, and at the same time punished the Germans with automatic arms and artillery fire.

The Germans halted their advance once their territory had been largely cleared of French troops, and except for sporadic thrusts at the Forbach salient which remained in French hands, displayed little activity.

Lines Stabilized. Thus, by the end of October, the lines in the West were stabilized about as they were at the beginning of hostilities. Despite intermittent reports of the massing of German troops on the Belgian, Dutch, and Swiss frontiers and of threats to these bordering neutrals (threats which were taken seriously enough in Belgium and Holland to cause increased mobilization, strengthening of defenses, and partial flooding), there was little or no activity on the fighting fronts—except incessant patrolling by

both sides—from November 1 until the end of 1939.

Neither side, however, was inactive. Of the 2,000,000 or so men that the Allies and Germany had concentrated on the Western Front by the year's end, perhaps no more than 1600 to 2000 a day were coming to blows during most of November and December. Each side sent out daily about 40 small patrol detachments of some 20 men apiece to patrol the dense woods, little river valleys and hills along the 118 miles of front between the Rhine and the Moselle. These men, using some of the tactics of Indian fighters—woods fighting, ambushes, etc.—reconnoitered along the border in the "No Man's Land" between the two main lines of resistance, and occasionally the armies conducted raids in force. Prisoners were taken daily, men died and men were wounded—but the armies stood still.

Both sides utilized the period of calm before the expected storm, not only in the battle of munitions behind the fighting fronts, but to enormously strengthen the defenses of the Maginot Line and the Westwall. The French closed the gaps in the Maginot Line; strengthened its somewhat weak flanks in front of the Belgian and Swiss frontiers, and to make security doubly sure, built a second line of strong field fortifications behind the tremendous fortresses of the Maginot Line. In the first three months of hostilities they strung 8350 miles of barbed wire; poured more than 1,000,000 cubic yards of concrete and used 100,000 tons of steel. The Germans also took advantage of the lull. On November 15—after the French-Italian tension that had accompanied the outbreak of war had definitely eased—the restricted zone ("Zone of Armies") that had rimmed France from the Channel to the Mediterranean was reduced in size and free access to the Franco-Italian border region was permitted.

British Troops Arrive. The small British Expeditionary Force that was quickly transported to France upon the outbreak of war included also excellent pick-and-shovel men; in fact the "Tommies" had little else to do in the first four months of war. (In December British divisions, under French command, took over a small sector of the front lines near Luxemburg.) The British were able to despatch six divisions, corps troops and corps staff almost immediately; the transportation of the 158,000 men, with full equipment and 25,000 vehicles was completed by October 8. Subsequently more thousands were shuttled across the Channel, mainly from Southampton to Cherbourg, and a large service of supply, rear area organization, base hospitals, etc., were set up, sufficient not alone to care for the first six divisions, but for a very considerably larger force expected in future months. The organization of Britain's land effort was under Sir Edmund Ironside, Chief of the Imperial General Staff, and the British Expeditionary Force in France was commanded by Viscount John Gort, known to his troops as "Tiger" Gort. Lt.-Gen. Sir John Dill commanded the 1st Corps of the B.E.F.; Lt.-Gen. Alan F. Brooke, the 2nd Corps.

The first Canadian division to go overseas—about 16,000 strong—a unit which may be the nucleus for a corps of Canadian troops, reached England (for further training) in December, under command of Maj.-Gen. A. G. L. McNaughton, while an Australian air squadron arrived later in the month, vanguards of the Dominions' marshalled forces.

The war in the West in 1939 was, therefore almost entirely a war of stalemate, a war of pickaxe, shovel, and training camp. In the small-scale fighting, there were no real surprises of a technical nature, although the large use by both sides of land mines and "booby traps" was not wholly expected. The Germans made some effective use of smoke shells for concealment of their movement and also tried out light body armor on some of their troops. Both sides evolved new methods of patrolling and both stressed cover, camouflage, concealment, and surprise.

THE WAR AT SEA

The war at sea is largely a story of statistics—statistics which tell the tale of victory or defeat. For the sea war is attrition war, guerrilla war—a vicious, hard, arduous, and protracted struggle—the war of blockade and counter-blockade. The nature of the struggle at sea had long been clearly forecast in the returns of the fleets, the technical data of tons and guns which revealed the enormous disparity between the mighty fleet of Britain, further strengthened by that of France, and the little fleet of the Third Reich, strong in submarines but weak in major surface craft and in no sense capable of meeting the Allied fleets in stand-up battle. Nor could the Germans hope to break the Allied blockade immediately imposed upon them; their recourse must be to weapons of speed, surprise, and stealth, to the submarine, supplemented by the plane, in attempts to clamp a counter-blockade upon Britain; to the surface raider, preying upon British commerce; to attempts to whittle down gradually by mine and torpedo and bomb the vastly superior fleet of the Allies; to attempts to create strategical diversions which would force the dispersion of that fleet. Germany, therefore, immediately upon war's outbreak, assumed a defensive naval strategy, coupled with opportunistic tactics.

The British Admiralty immediately utilized the vastly superior British surface strength to chase German commerce from the seas, to immerse in harbors all over the world, or to capture, German merchantmen; to cut off the arteries of trade which supplied the Reich with so many of her essential war materials.

With Winston Churchill quickly appointed First Lord of the Admiralty, and with Admiral of the Fleet Sir Dudley A. Pound as First Sea Lord, the Main Fleet (comprising most of the vessels of the Home Fleet, re-enforced) under Admiral Sir Charles Forbes, was immediately based on Scapa Flow, Cromarty, and the Firth of Forth and it has been in the last analysis this fleet with its great ships of the battle line that has kept the German Fleet close to its own coasts and made the British blockade possible. Vice Admiral Sir A. B. Cunningham had command of the Mediterranean Fleet at the outbreak of war.

The Reserve Fleet, fortunately mobilized prior to the opening of hostilities was a considerable reinforcement to the British Naval forces.

So, too, was the French Navy, under Admiral Jean Darlan, naval chief of staff, which—in the interest of unified command—was placed under the general direction of the British, just as the high command on land was vested in the French. The men-of-war flying the tricolor, divided into a strong Atlantic fleet and a Mediterranean squadron, provided important aid in holding the U-boat campaign in check, and the fast French light vessels, as well as the submarine cruiser

Surcouf, world's largest submarine and the powerful, fast battleships *Dunkerque* and *Strasbourg* were particularly useful in wide-ranging activities, operating against German commerce and defending Allied commerce against German surface raiders.

The German Navy, under Grand Admiral Erich Raeder was divided into North Sea and Baltic squadrons (which, however, could be easily merged through the connecting link of the Kiel Canal), and this unified fleet was apparently under the direct command of Admiral Wilhelm Marschall. This surface fleet, however, in the first months of war, played an inactive role, as the titanic struggle of the war at sea was primarily between the surface might of Britain and the submarines of the Reich.

The Allied Blockade. To add to the British Fleet strength, the Admiralty immediately commenced to convert suitable liners into armed merchant cruisers (50 vessels had been, or were being, so converted in November) and assigned a considerable number of them to the Northern Patrol, which took up the actual business of visit and search and blockade in that vast, tempestuous, uninviting stretch of water between the Hebrides and Iceland and Greenland and from the Orkneys to the Norwegian coast. At the same time the World War Dover Patrol was reconstituted; minefields were laid to block and protect the Strait and at other points along the coast to guard important harbors, and the blockade, quickly instituted, gradually increased in effectiveness as winter came and more and more British merchant and fishing vessels were converted to naval use, ran up the White Ensign and further augmented the power of what was already the largest fleet in the world.

Control ports for the examination of the papers and cargoes of neutral merchantmen were established; by the British, at Kirkwall in the Orkneys, Ramsgate (The Downs), Weymouth, Gibraltar, Malta, Haifa, Port Said, and Aden; by the French, at Dunkirk, Havre, Marseilles, and Oran, and the World War system of "navicerts"—or certificates issued to shippers in neutral countries designed to facilitate the passage of their goods through the blockade—was instituted in the late fall. Negotiations were also commenced with neutral nations bordering on Germany—primarily Holland—with a view to arranging import quotas and thus preventing goods from the outside world funneling through the neighboring neutrals to Germany in increasing volume.

In other respects the first months of the war

passenger liner *Athenia*—on the evening of September 3, only a few hours after Prime Minister Neville Chamberlain and Premier Edouard Daladier had accepted the gage of battle. The incident appeared to be, in many respects, another *Lusitania*, for many American refugees from the war were on board and 30 of them, together with some 82 other nationalities lost their lives. The explosion that sank the *Athenia* was sudden and without warning, but the American public received the news calmly and the incident only added to the desire of public opinion in the United States for neutrality. (Germany has continuously denied that any of her vessels caused the loss of the *Athenia*.)

German submarines, with some few exceptions, at first observed the rules of international law, and stopped and warned ships before destroying them, putting their crews in places of safety wherever possible. Their toll in the first weeks of war was relatively high since many British ships were caught upon the high seas at the start of hostilities and had to run the gantlet to port.

The British answer to submarine operations was to employ immediately the technique it took them three years to learn in the World War—the convoy system. This system was fairly well established for the most important trade routes within three to six weeks after war started. Merchantmen were herded together into groups at Halifax, Sydney, and Gibraltar and escorted to ports in Britain and France by destroyers, escort vessels, sometimes by heavier vessels, and when near land by long-range patrol planes. Britain also gave another answer to the German submarine war; she laid minefields—both in the Straits of Dover and off the German coasts; she established destroyer patrols, armed trawlers and drifters and sent them out on anti-submarine patrol, and she armed her merchantmen (more than 1000 had been so equipped by the year's end), both with anti-submarine and anti-aircraft guns.

The defensive measures against the submarine were thus adopted much more quickly than they were during the World War, although Germany's submarine campaign was started immediately upon the outbreak of war, much sooner than it commenced 25 years ago. The German counter-blockade of Britain seemed for a time in the first six weeks of war to be making fair—though not dangerous—progress, but the defensive measures taken lessened its effectiveness during October and the first part of November, but losses mounted again in December and a seesaw battle

MERCHANT SHIPPING LOSSES, 1939

Country	September		October		November		December		Grand Total	
	Number	Tonnage	Number	Tonnage	Number	Tonnage	Number	Tonnage	Number	Tonnage
Britain.....	31	148,713	19	85,018	34	91,882	46	128,602	130	454,215
Neutrals.....	15	35,260	17	48,410	16	83,363	44	115,080	92	282,113
France.....	1	2,660	4	36,312	5	10,066	1	?	11	49,038?
	47	186,633	40	169,760	55	185,311	91	243,682	233	785,386?

Daily average sinkings during first four months of European War, 1939—194 ships, 6,544 tons. Daily average sinkings during first four months of World War, 1914—2,200 tons. Daily average sinkings during first four months of unrestricted World War submarine campaign, 1917—21,762 tons.

at sea closely paralleled the blue-water procedure of the World War.

Submarine Warfare. Germany, throttled on the surface, struck quickly under the surface; her submarines, already at sea when war began, apparently claimed their first victim—the British

was begun between the submarine (assisted by the plane) using its weapons—the torpedo, the mine, and the gun—and the defense forces, a battle in which first one, and then the other, appeared to have the advantage.

Shipping Losses. The statistics of this war

at sea in which tons sunk may spell victory or defeat are shown in tables on pages 243 to 245.

The British *gross* mercantile losses were materially reduced by intense work at the shipyards, by capture of German merchantmen, by purchases and chartering of ships of other nationalities.

In early December it was estimated by Mr. Churchill that Britain's net losses (arrived at by deducting from gross losses the tonnage of captured German ships, the tonnage of ships chartered or purchased from other nations, the tonnage of new ships built) were only 60,000 tons. At the end of December, the British naval attaché in Washington issued a statement in which it was calculated that Britain's net losses had averaged only 500 tons a week for the first 16 weeks of war, a figure which apparently was difficult to reconcile with Mr. Churchill's statement of a few weeks earlier. Nor did the optimistic British statements take sufficient account of the fact that shipping losses, whether to neutrals or Allies, represented a net drop in the world tonnage totals, which could not be replaced by transfer of ships from flag to flag. Nevertheless, it was apparent at the end of 1939 that the German counter-blockade would have to be made far more effectual and the rate of ship sinkings increased perhaps 200 to 300 per cent before a danger point was reached.

German merchant ship losses in the first four months of war totalled about 21 ships of 122,299 tons, increasing the world tonnage loss to 254 ships of 907,585 tons. Most of the German vessels were scuttled to prevent capture; several were sunk by British shellfire after their crews had been removed. In addition to these losses the Allies captured about 20 German merchantmen of almost 100,000 tons in the first four months, bringing Germany's total merchant marine tonnage loss to 222,000 tons. The largest and most important loss to Germany was the liner *Columbus*, 32,581 ton ship, intercepted by a British destroyer 450 miles off Cape May, N. J., on December 19 and scuttled by her own crew to prevent capture. She had been trying to run the blockade from Vera Cruz, Mexico. More successful was the *Bremen*, which left New York a few days before war was declared, successfully eluded British cruisers and reached Murmansk, Russia. In December the *Bremen*, following Norwegian territorial waters most of the way, slipped back to Germany. Some of the most important Allied and neutral losses were the Polish liner *Pilsudski* (under charter to the British) apparently torpedoed, November 26; and the Japanese liner, *Terukuni Maru* of 11,930 tons, sunk November 21. No U. S. ships were sunk.

An unknown number of German submarines were sunk by Allied anti-submarine measures; the crews of some were captured; combined British and French claims estimated that from 30 to 45 U-boats had been destroyed in the first four months of war, a total probably more than twice as large as the actual losses. Moreover German U-boats were being built at high speed as replacements, although it was not until the year's end when shipyards at captured Danzig, Gdynia, and elsewhere added their quotas to the high-speed output of German yards that the German submarine output apparently commenced to reach peak capacity. This construction capacity was, of course, a closely guarded secret, but there was reason to believe it could equal or excel

the World War construction average of 6.6 new U-boats a month, a rate probably in excess of the average monthly rate of U-boat losses.

Nevertheless British measures made it more difficult for the submarine to find suitable targets; the losses of unconvoyed and unprotected neutral ships quickly reached a figure out of proportion to British losses, and sinkings of British vessels dropped from 64,000 tons in the second week of war to 5000 tons in the sixth.

In mid-November, the Germans supplemented their warfare against merchantmen by adding another weapon—the mine—to those heretofore used—the torpedo and the gun. German submarines—and, for the first time in any war, German planes—laid mines, apparently of a new and more sensitive type, in the Thames estuary and close to the British coast. For a time, largely because of obvious British unreadiness to meet such a measure (the mistress of the seas apparently had less than 200 minesweepers in commission, as compared to some 2500 of this general type at the end of the World War), the mine-laying campaign increased shipping losses materially. However, again the defense mobilized its resources; trawlers and their crews were hastily recruited for minesweeping duty; balloon barrages were made amphibian and extended to the waters around the Thames, and in the last week of December, the Admiralty announced plans for laying a gigantic minefield—the largest ever projected—in a 500 mile belt 30 to 40 miles wide from the Orkneys to the Downs off the Eastern British coast to protect coastal shipping lanes against minelaying and submarine excursions. Thus, within four months of war, the British had already initiated two projects which they did not commence in the World War until 1917–18—the convoy and then the interdicting minefield—which proved 21 years ago to be the two most efficacious anti-submarine measures tried.

And the British answered the German mine campaign in another way—by extending the British blockade to German exports as well as to imports, another measure that was not taken in the World War until the latter years.

Surface raiders, highlighted briefly by the activities and dramatic end of the *Admiral Graf Spee*, were another menace to which a defense had to be found. During her three months or more of preying upon British shipping around the Cape of Good Hope, the *Spee* sank some nine ships. By far the greatest losses, however, were caused by the submarine torpedo and the submarine and aerial mine, as the following table shows:

CAUSES OF MERCHANT SHIP LOSSES, 1939
(German losses not included)

Cause	Number	Tons
Submarines	79	348,844
Mines	82	252,198
Raiders (surface)	10	55,133
Air attack	9	2,797
Miscellaneous and unknown	53	126,314

Note: The high ratio of mine to submarine sinkings is noteworthy and represents some departure from the experience of the World War. The losses by air attack—bombs and machine guns—were also far higher proportionately than World War figures when only 7,900 tons of commercial shipping, mostly fishing vessels, were sunk by aircraft during the entire war.

Economic Effects of Blockades. Blockade and counter-blockade had immediate effects upon both Britain and Germany, but the warfare at sea caused very little dislocation of French econ-

omy. An estimated 800,000 to 1,000,000 tons of goods allegedly destined for Germany were intercepted and detained as contraband in the first four months of war, and Allied sources believed that in less than four months of war more than 10 per cent of Germany's annual normal imports had been cut off, an amount which—it was estimated—would increase to 40 per cent over a period of a year of war. Germany's food rationing system, already in effect at the outbreak of war, was drastically tightened, and in none of the warring countries was gasoline procurable to private purchasers except in limited amounts and with special permissions. England announced in December that bacon, ham and meat, butter, and sugar would be rationed commencing in January, and British trade fell off sharply. Imports shrank by one-third and there was a 42 per cent drop in exports in September compared to September, 1938, but as the convoy system started to work smoothly trade with much of the outside world became more nearly normal.

Naval Actions and Losses. The other, and perhaps the more important, phase of the war at sea was the guerrilla struggle between the men-of-war of the three nations. Unable to meet the British fleet in a stand-up battle, the German Navy adopted the tactics of surprise and stealth, knowing that if it was successful in whittling down the strength of the British surface fleet to a size commensurate with its own, the British blockade was broken and the war won. The particular targets of the German submarines and planes were the 15 British capital ships (11 battleships and 3 battle cruisers) with which Britain started the war, for it was upon these ships primarily that British superiority at sea rested.

In this campaign Germany was successful in sinking one and in damaging at least one other of these ships in the first four months of war. On October 14, Lieutenant Gunther Prien took his U-boat into the supposedly secure harbor of Scapa Flow, where a large section of the British main fleet was based, and sank the battleship *Royal Oak* with three to five torpedoes. The feat was almost repeated, apparently by another German submarine in November, which about the 22nd, penetrated the defenses of the Firth of Forth and damaged the new 10,000-ton cruiser *Belfast*.

Late in December, about the 28th, a battleship of the *Queen Elizabeth* class, probably the *Barham*, was torpedoed at sea, and sometime during the first months of war, the battle cruiser *Repulse* was damaged slightly though the British said the damage was not suffered in battle. The British suffered another major loss when the aircraft carrier *Courageous*, first man-of-war to be lost by Britain, was torpedoed and sunk on September 17. Some of these losses—particularly that of the *Royal Oak*—were undoubtedly partially due to some inefficiency or inadequacy in British naval preparations, and for a time many believed that the British "muddling-through" policy of the World War was again being repeated.

November and December furnished two of the most dramatic incidents in the war to date. On November 25 a German "pocket battleship," apparently the *Deutschland*, accompanied by a cruiser identified as the *Emden* was sighted off Iceland by the British *Rawalpindi*, an armed merchant cruiser with six-inch guns assigned to the Northern Patrol. The 11-inch guns of the German vessel poured a murderously accurate

fire into the outclassed British vessel, whose crew fought her till all guns were out of action. The German man-of-war and her consort disappeared in the northern mists before British reinforcements could arrive and the *Rawalpindi*, ablaze from stem to stern, sank with the major portion of her brave crew.

Sinking of Graf Spee. On December 13 occurred one of the strangest battles in naval history. The German "pocket battleship" *Admiral Graf Spee*, which had been raiding British commerce since the war's beginning and had sunk nine vessels, was sighted off Uruguay by the British eight-inch-gunned cruiser *Exeter*, which quickly called two six-inch-gunned cruisers—the *Ajax* and *Achilles*, to her assistance. In the ensuing action, the three lighter but faster British men-of-war under Commodore H. H. Harwood stuck to the heels of the *Graf Spee* throughout a day-long running fight, using smoke screens and hit-and-run tactics to nullify the heavier weight of metal of the German. The *Exeter* was hit so heavily by the 11-inch guns of the German

NAVAL LOSSES, 1939

British Ships Lost	Tons
<i>Royal Oak</i> , battleship	29,150
<i>Courageous</i> , aircraft carrier	22,500
<i>Rawalpindi</i> , armed merchantman	16,697
<i>Oxley</i> , submarine	1,354
<i>Blanche</i> , destroyer	1,360
<i>Gipsy</i> , destroyer	1,335
<i>Duchess</i> , destroyer	1,375
<i>Mastiff</i> , minesweeper	520
<i>Aragoile</i> , minesweeper	315
<i>Northern Rover</i> , converted trawler	655
<i>Washington</i> , converted trawler	209
<i>William Balleli</i> , converted trawler	202
<i>James Ludford</i> , converted trawler	500
<i>Ray of Hope</i> , converted drifter	200
<i>Loch Doon</i> , converted trawler	534
Total—15 ships, 76,906 tons.	

British Ships Damaged	Type
One <i>Queen Elizabeth</i> class	Battleship
<i>Repulse</i>	Battle Cruiser
<i>Iron Duke</i>	Former Battleship used as training ship
<i>Exeter</i>	Heavy Cruiser
<i>Ajax</i>	Light Cruiser
<i>Achilles</i>	Light Cruiser
<i>Belfast</i>	Light Cruiser
<i>Southampton</i>	Light Cruiser
<i>Edinburgh</i>	Light Cruiser
<i>Jersey</i>	Destroyer
<i>Mohawk</i>	Destroyer
Unidentified	Submarine
Unidentified	Submarine
Unidentified	Canadian Destroyer
<i>Kithwake</i>	Patrol Vessel
(Ten to twenty trawlers and drifters that may have been utilized as naval auxiliaries were also damaged.)	
Total—15 ships.	

French Ship Lost	Tons
<i>Pluton</i> , minelaying cruiser	4,773
Total—1 ship, 4,773 tons.	

German Ships Lost	Tons
<i>Admiral Graf Spee</i> , armored ship	10,000
<i>Esté</i> , patrol boat	400*
Unidentified patrol boat	400*

Fifteen to 35 submarines, most of them probably from 500 to 740 tons, may have been destroyed. Some Allied claims are even higher than this number, but the Germans have admitted the loss of only a very few, and it is probable that no more than 15 to 20 have actually been sunk, although others may have been damaged.

Total—18 to 38 ships, 19,500 to 32,800 tons.

German Ships Damaged	
One light cruiser of <i>Königsberg</i> class	
One light cruiser of the <i>Leipzig</i> or <i>Königsberg</i> class	
One heavy cruiser of the <i>Blücher</i> class	
Total—3 ships.	

* Believed seriously damaged. * Approximate tonnage

she was forced out of the action, and the *Ajax* was also hit but the *Graf Spee* was in turn hit, and about midnight sought refuge in Montevideo with holes along her waterline, in her bow and fire control tower and with 36 dead and 60 wounded. The *Exeter* suffered 61 dead and 23 wounded; the *Ajax* 7 dead, 5 wounded; and the *Achilles*, peppered with shell splinters, 4 dead and 3 wounded.

Given until the afternoon of December 17 to leave port or be interned, Capt. Hans Langsdorff of the *Spee* took neither alternative, but on the 17th, acting on direct orders from Hitler in Berlin, took the "pocket battleship" out of the harbor, and scuttled and destroyed her in the River Plate, while the *Ajax*, *Achilles*, and at least one other British warship waited outside. Interned with his crew in Buenos Aires Captain Langsdorff committed suicide three days later, and was hailed as a hero in Berlin. The scuttling of the *Graf Spee*, however, following her fight with the British cruisers and her retreat into port, was elsewhere hailed as a British victory—the most dramatic one and the first clear-cut one of the war—and in the world's opinion German morale suffered a considerable blow.

British seamen also struck another blow for England on December 13 and 14 when a British submarine, the *Ursula*, the Admiralty claimed, torpedoed a cruiser of the *Königsberg* class in the Elbe River (the British claimed she was sunk, but this is unlikely), and another submarine, the *Salmon*, fired torpedoes at another German 6000-ton cruiser of the *Leipzig* type at sea, and also at a 10,000-ton cruiser of the *Blücher* class, both of which, according to the British Admiralty, were damaged. The Germans denied all these claims.

THE WAR IN THE AIR

One of the most surprising features of the first four months of war was the relative inactivity of the aerial fleets. Both governments and peoples had expected early and ruthless bombing raids upon both military and non-military objectives—but except in the conquest of Poland, where a large part of the German air fleet was used with devastating power—the planes of both sides were held strictly in leash and were used only for limited objectives—not in the "all-out" war that had been so freely predicted.

From the Allied point of view this policy was undoubtedly the correct one, since at the start of war the German flying fleet was far better prepared for an "all-out" conflict than were the Allies, and German factories had a replacement rate probably superior to both Britain and France combined. And a period of relative quiescence in the air would enable the Allies in time, with American help, to overtake the German lead.

It was less easy to understand why the Reich did not undertake more energetic air operations, once the Polish campaign was completed and Hitler's subsequent bid for peace was rejected. There are several possible military reasons (although it is probable that political factors were of more importance than military ones). One was the lateness of the season; had an aerial campaign against Britain been started, the execrable flying weather of a Western European winter would have prevented a continuous, uninterrupted campaign. Another was Germany's own vulnerability to aerial bombing, and her knowledge that her heavy industries in the Ruhr (only 30 to 40

minutes flying time from French bases) and in the Saar (on the French border) would be heavily bombed in this horrible game of tit-for-tat. Still another, and perhaps the most important reason was the probability that the Reich would gain by time; that the production rate of her aircraft factories—high, but not producing at maximum wartime capacity on September 1—would increase faster than the increase in British, French, and American factories combined—until sometime in 1940—probably late spring.

Regardless of the reasons the air arm did not play its expected part in the first months of war—although its accomplishments, judged against the yardsticks of past wars, were considerable.

British Activities. The British dramatically struck the first blow on September 4 (while the Germans were busy in Poland) sending a number of Bristol Blenheims and Wellington bombers over the Kiel Canal on a raid against the German fleet. Claims were variously made that a "pocket battleship" or a battleship of the *Scharnhorst* class had been badly damaged, but this was denied by the Germans and from a careful weighing of the censored evidence, seems improbable. The British lost a considerable number of the planes sent on the raid; in fact the raid apparently was so costly that no other bombing attempts of the kind were made for weeks.

During September and October the British contented themselves with far-flung reconnaissance flights over Germany—many of them photographic missions, many for the purpose of dropping propaganda pamphlets. Both Britain and France were much criticised for failing to send "shuttle bombing raids" across Germany during the Polish campaign, or to despatch planes to base on Polish airfields and to operate against the German Army. But neither England nor France had enough planes to spare for any such purpose; moreover it would have been impossible to base any considerable number of British or French planes on Polish fields, due not alone to the speed of the German advance, but particularly because of the lack of adequate base facilities, mechanics, spare parts, gasoline, bombs, or ammunition to service such planes. Polish flying fields were not really adequate to support the Polish flying force, let alone any considerable increment to its strength.

The Royal Air Force, under Air Chief Marshal Sir Cyril L. N. Newall, was divided at the outbreak of war into three principal combat commands—Fighter Command, Air Chief Marshal Sir Hugh C. T. Dowding, commanding; Bomber Command, Air Chief Marshal Sir Edgar R. Ludlow-Hewitt, commanding; and Coastal Command, Air Marshal Sir Fred. W. Bowhill, commanding. A section of the Fighter Command, and apparently also of the Bomber Command, was early established in France (and were supplied by air from England for almost two weeks) with the British Expeditionary Force, and some of these Royal Air Force planes were specially earmarked for army co-operation, photographic and land reconnaissance work. The planes based in France were later put under a unified command answerable to Viscount Gort. Of all the commands the Coastal Command was most active, its planes (mostly long-range flying boats) flying more than 1,000,000 miles a month on reconnaissance, anti-submarine and convoy patrols and carrying out some 60 attacks against German submarines.

French in Action. The French Air Force under Gen. Joseph Vuillemin conducted some reconnaissance flights over Germany (both Britain and France mapped practically the entire German Westwall from the air), but its bombing squadrons saw little action. Fighter pilots were busy above and near the land fronts in October, November, and to a lesser extent in December—the reconnaissance and photographic flights invariably coinciding with a burst of brief but spectacular aerial combat between German and French (and occasionally British) fighters. In these combats, the American-built Curtiss Hawk 75-A, single-seater, low-wing fighters powered with Pratt and Whitney engines and armed with four or six .50 caliber machine guns, demonstrated their maneuverability and high rate of climb in combats with the much-touted single-engined German Messerschmitts and were clearly among the outstanding planes on the Western Front in the early months of the war. In these combats apparently two Messerschmitts were shot down for every Curtiss lost. The British Hawker Hurricanes, most of them held at home against the threat of German raids, also proved excellent combat planes.

German Air Strategy. After disposing of Poland, the German Air Force, its four fleets commanded by Generals Kesselring (First Air Fleet), Felmy (Second), Sperrle (Third), and Löhr (Fourth), commenced a series of long-range reconnaissance and bombing flights over British fleet bases in Scotland, the Orkneys, and the Shetlands. The first of these on October 16—over the Firth of Forth—apparently caught the British by surprise for no air raid alarm was sounded, and although only a few planes participated in the raid the cruiser *Southampton* was struck and slightly damaged, and a number of casualties were suffered aboard the cruiser *Edinburgh* and the destroyer *Mohawk*. The *Mohawk's* captain, Commander R. F. Jolly, wounded in both legs, had himself propped up in a chair, directed his ship's antiaircraft fire against the raiding planes and coned his ship to her pier, dying as she docked.

The next day German planes raided Scapa Flow, damaging slightly the old battleship *Iron Duke*, now used as a training ship. Successive raids by relatively small numbers of planes followed, and later in the year a particular target were the harbors of the Shetlands used as British seaplane bases and as bases by the blockading squadrons of the Northern Patrol.

The British Fleet at sea, as well as in port, was the target of German planes, and on September 26, a squadron of British capital ships, an aircraft carrier, cruisers, and destroyers were attacked by about 20 planes in what Berlin described as "the first successful action of its kind in military history." Subsequently throughout the autumn and early winter British men-of-war in the North Sea were frequently attacked from the air in the first considerable wartime tests of air power versus sea power. The Germans claimed the sinking of the aircraft carrier *Ark Royal* (a bomb apparently exploded close alongside the carrier and may have caused some slight damage) and later said their planes, aided by their fleet, "controlled the North Sea"—a bombastic and spurious statement.

Except for the early raids against British bases when the British air defense (conducted in the Firth of Forth area largely by the Auxiliary Air

Force) was none too strong, British reaction was prompt, vigorous, and effective. Defending pursuit or interceptor planes were able, because of the small number of planes used by the Germans in each raid (never more than 12 to 15 over naval base areas; sometimes as many as 20 or a few more against ships at sea) to "gang up" against the Germans and in this way to shoot down a rather high proportion of them, while at sea the heavy antiaircraft armament of the men-of-war (particularly the multiple-barrelled pom-poms) kept the bombers at rather high altitudes and distracted their aim.

Thus, the early tests of air power versus sea power while in no sense decisive of the broad problem posed by such warfare (since the raids were on too small a scale and were often made by flying boats or older type German planes) produced few material results, except in the first two raids, and did not alter the basic strategic situation in the North Sea. There was some evidence, however, that the British Fleet—out of respect for air power—was keeping a more distant blockade of the German Coast than the small strength of the German surface navy would warrant.

In addition to actual bombing raids German planes—usually Heinkels or Dorniers—carried out long-range reconnaissance flights over both Britain and France, but particularly over Britain, photographing objectives as far west as Liverpool. These flights were persistent, but in no great force.

Still another important use of the plane, but again one on too small a scale to permit deductions, was its employment by the Germans in an attack against a North Sea convoy of merchant ships. Extensive attacks from the air against merchantmen had been expected, particularly when the submarine campaign slowed up, and British merchantmen were armed with anti-aircraft as well as anti-submarine guns, but the attacks made were few and sporadic and the Germans apparently suffered heavy losses without material result.

By far the most effective use of German planes (outside the campaign in Poland) was made in late November and December, when aerial mine-layers (mostly seaplanes)—the first used in any war—supplemented the efforts of German mine-laying submarines and laid mines in the Thames estuary and other areas off the British coast. Later the Germans commenced a determined attack upon the British fishing fleet, bombing and machine-gunning numerous trawlers. Both of these assaults, difficult to combat and launched by surprise, caused at first considerable losses, but defensive British measures, coupled with commencement of a more vigorous British aerial counter-offensive checked them before the year's end. British planes attacked seaplane bases in the Frisian Islands and maintained a constant aerial patrol off those islands. Their aggressiveness was, however, in turn checked in December, when one large-scale raid sustained severe losses when attacked by a large number of twin-engined German Messerschmitt interceptors, armed with quick-firing cannon.

Results of Air Warfare. Thus the war in the air in 1939 ended on a note of frustration for both sides, with neither having a clear-cut superiority. Despite the more or less continuous aerial activity, interrupted only by bad weather, it was obvious that the air arm had been held

strictly in leash by both sides (from Germany came unconfirmed rumors of disagreement in the High Command partially about this policy; in England, *The Aeroplane* openly criticised what it termed the inefficient and inadequate use of the air force and said it was hampered by the two older fighting services). Thus, no comprehensive conclusions were possible, although certain limited and tentative ones were drawn, viz:

In fighting plane versus fighting plane the value of high speed seems to have been overemphasized as particularly exemplified by the successful and spectacular battle between nine French Curtiss single-seater fighters on November 6 against 27 faster but less maneuverable German Messerschmitts.

Bombing at extreme distances—the 1000 to 1200 miles from the Reich to British naval bases and return—is a major problem, technically, tactically, and in organization and supply.

The war may force the development of a new type of plane—the long-range pursuit ship, capable of accompanying and protecting the bomber on distant raids.

Long-range patrol planes were extremely useful in the anti-submarine campaign and also simplified, and improved the effectiveness of, the British blockade.

As the year ended it was apparent that each side had completed all exploratory and reconnoitering flights necessarily preliminary to any large-scale aerial effort, and that each was girding itself for that tremendous aerial offensive—so long expected and so long delayed.

Despite the inconclusive results obtained by the plane in the opening months of war—results which had little effect upon the course of the war—the fear of the plane—particularly fear of its unrestricted use against cities and civilians—permeated the war efforts of all belligerents, and in no previous war in history have such gigantic efforts been made on the Home Fronts. Principal cities of all combatants were blacked out at night, with a consequent depressing effect upon morale, and hundreds of thousands of troops, civilians, and semi-civilians (about 1,250,000 in Britain alone) were kept constantly in readiness for warning systems, air raids precautions work, manning antiaircraft guns, etc. Thousands of antiaircraft guns and searchlights, hundreds of defending fighting planes, and millions of dollars worth of other equipment were utilized in these defensive systems. Governments, for the first time in history, made their major war efforts upon the

Home Fronts, and the civilization of Western Europe burrowed underground against the terror from the skies.

THE RUSSIAN FRONT

The Baltic States. Flushed with her share of the spoils in Poland, Soviet Russia, following the policies of the Czars and pushing westward to the Baltic, quickly became a major factor—perhaps the most important single factor—in the War of 1939. Russia immediately exerted pressure upon the small Baltic states—Latvia, Lithuania, and Estonia—and following the voluntary withdrawal of German influence from these states, exacted a series of treaties during October which made these tiny nations virtual appendages of the Soviet giant, and gave Russia naval and air bases on the Baltic. During October and November Russian troops were garrisoned in the three countries and Soviet warships and planes based on Estonian and Latvian harbors. Naval and air bases at Libau, Windau, Tallinn, Baltic Port, Dagoe, and Oesel Islands and elsewhere, and a coast artillery base between Ventspils and Pitraga (Latvia) were established.

Attack on Finland. Russia then commenced to exert pressure upon Finland, demanding certain islands in the Gulf of Finland and other territorial concessions. Protracted negotiations reached no agreement, and after a period of relative diplomatic quiet, Russia suddenly turned the threat of force into the use of force, and on November 30 started an undeclared war against little Finland.

Russian planes, operating from Leningrad and the newly-won Estonian bases, bombed Helsinki and other towns; the Russian fleet opened a bombardment of Hangoe and other ports, and the Red Army pushed across the frontier at 8 a.m. The air invasion, sporadic and feeble, caused considerable initial damage and loss of civilian lives in Helsinki, but was militarily ineffectual. The sea attacks were equally purposeless and the Finnish coastal batteries gave far better than they got damaging in one of several engagements the new Russian cruiser *Kirov* and damaging or sinking a Russian destroyer. The Russian Navy, however seized the islands in the Gulf of Finland Russia had previously demanded from the Finns—Hogland, Pittesari, Rovansaari, and Seiskari—all of which were evacuated and undefended by the Finns. But the principal fighting quickly developed along widely-separated points of the 955 mile frontier with Russia, and it was soon apparent that the Russian bear had gotten hold of a tartar.

Soviet Strategy. The first and principal offensive was initially launched against the 70-mile wide neck of the Karelian Isthmus, where the Finns had established a line of field fortification and concrete pillboxes, known as the Mannerheim Line (from their generalissimo, Baron Kar Gustav Mannerheim) between Lake Ladoga and the Gulf of Finland. The Russian forces took Terijoki near the border, set up what they called a Finnish Communist state, and pushed a few kilometers into Finland until they approached the outposts of the Mannerheim Line. Against this line Russian forces, growing in strength in numbers, battered without making any appreciable progress until the end of the year, striking first across the Taipale River, then along the coast, then across the frozen surface of Lake Ladoga in an obvious attempt to seize Viipuri.

CASUALTIES AND LOSSES IN THE WEST [Exclusive of Poland, September, 1939 to Jan. 1, 1940]

Country	Dead*	Country	Planes lost*
Germany.....	4000*	Germany.....	150 to 275
Britain.....	2600*	Britain.....	100 to 200
France.....	1500*	France.....	80 to 150
Total.....	8100	Total.....	330 to 625

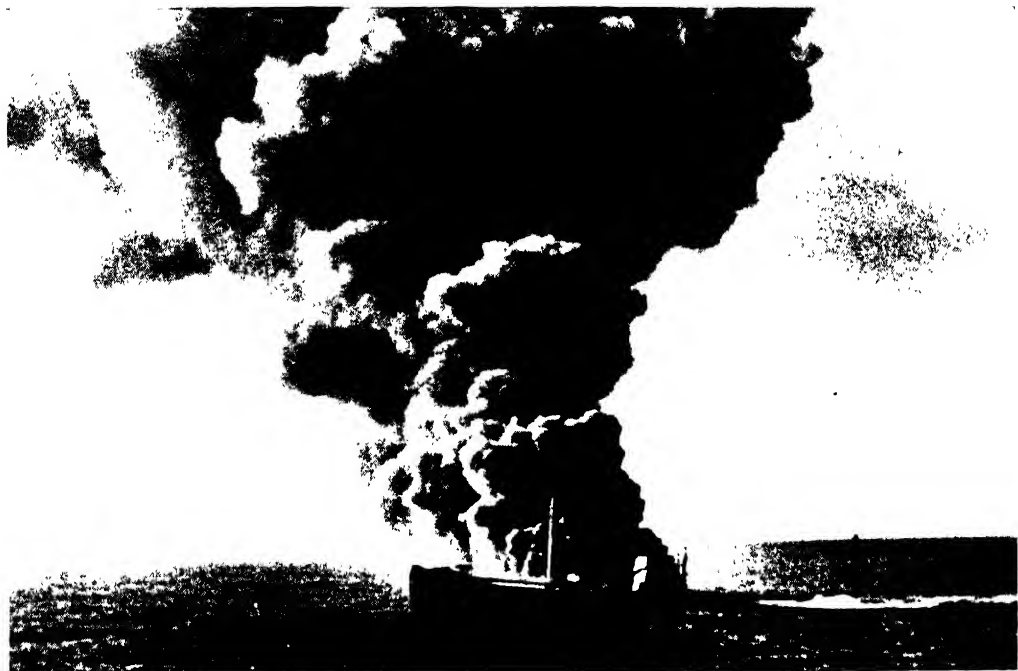
* Figures include all dead in land, sea and air forces of the three powers, but do not include wounded, missing or prisoners, and do not include civilian casualties.

* Only official announcement of German casualties in West was one of October 17, in which 196 dead, 356 wounded, 114 missing, were announced in fighting along Western Front. *Graf Spee* lost 36 known dead; 114 U-boat prisoners were known to be held in England.

* Paris announced on December 26 that 2511 British soldiers, sailors and fliers had lost their lives since the war began, only 3 of them on the Western Front.

* Paris announced on December 26 that 1434 Frenchmen had been killed since the war started.

* Battle losses only.



Wide World



Black Star

GERMAN SEA AND AIR WARFARE

Top The French tanker *Emile Miguel*, set ablaze by a German submarine, is shown slowly sinking by the stern in this photo taken from the S. S. *President Harding* on Oct. 13, 1939. *Bottom* This unusual photograph, taken from a Nazi bomber during the raid of Oct. 16, 1939, on the British naval base in the Firth of Forth, Scotland, shows bombs exploding near the cruisers *Southampton* (nearest the famous Firth of Forth bridge) and *Edinburgh*. One bomb glanced off the side of the *Southampton*, damaged the ship, and caused three casualties among the crew. Splinters from bombs falling near the *Edinburgh* caused seven casualties.



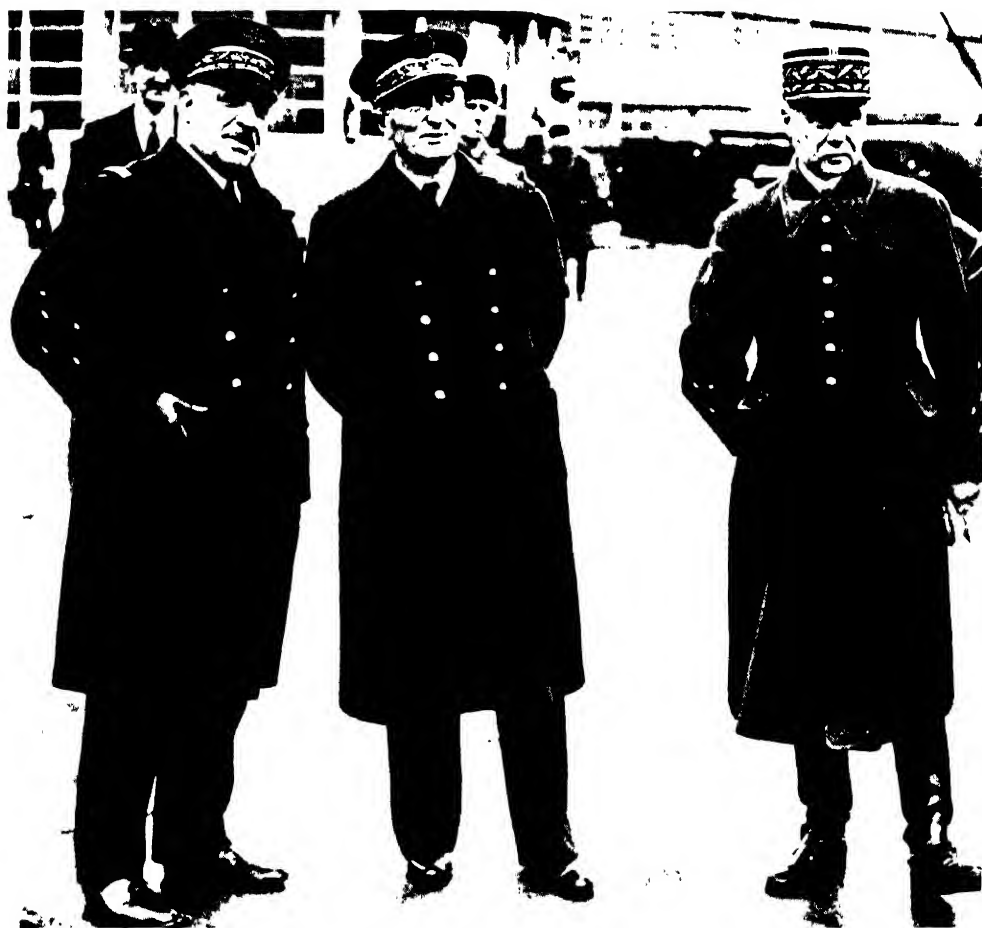
ADMIRAL SIR DUDLEY POUND
Commander of British Navy



FIELD MARSHAL BARON KARL GUSTAF
MANNERHEIM
Finnish Commander-in Chief

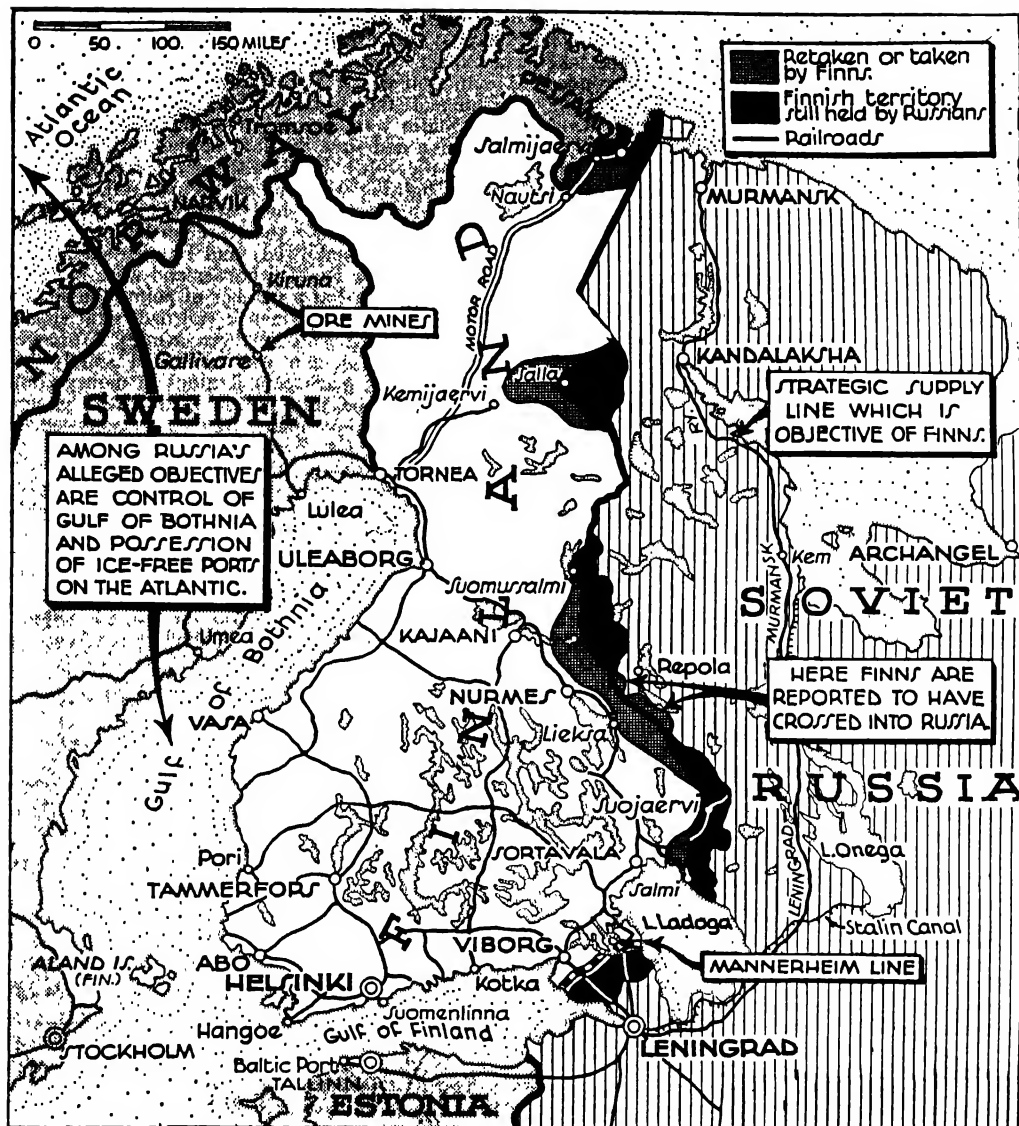


GEN. BORIS M. SHAPOSHNIKOV
Chief of Staff of Red Army



THE FRENCH HIGH COMMAND

Left to right: Gen. Joseph Vuillemin, Chief of the Air Force, Admiral François Darlan, Commander of the Fleet, and Gen. Marie Gustave Gamelin, head of all French national defense forces and Allied military Commander-in-Chief. All photos from *Brown Brothers*.



Courtesy of New York Times

RUSSO-FINNISH WAR, 1939

This map shows Finnish territories occupied by Russian troops during 1939, the areas retaken and taken by the Finns, the status of the various fronts as of December 31, and the major lines of communication of both Finnish and Soviet armies.

and southern Finland, but all in vain. The base for this attack was, of course, Leningrad.

A second push just to the north of Lake Ladoga, obviously launched with the intent of outflanking the Mannerheim Line, and also based upon Leningrad, crept for a time around the northern edge of the lake toward the important rail junction of Sortavala. A flank of this drive early seized Tolvajärvi and Suojärvi, easternmost Finnish railheads, and drove toward the railroad junction of Joensuu, but a strong Finnish counterattack checked this threat before the end of September, sent the Russians reeling back toward Suojärvi, and later, at the year's end, inflicted a severe defeat on the invaders at Aglaejärvi.

Further north another drive developed from Repola toward Nurmes; still another one from Kem on the Leningrad-Murmansk railroad as a base toward Suomussalmi and thence across Finland's "wasp waist" toward Uleåborg, on the Bothnian Gulf; and a third one southwest from Kandalaksha toward Salla, Kemijärvi and Torneå at the head of the Gulf of Bothnia. This three-pronged effort was obviously intended to cut Finland in two and to cut off the rich southern portion with its industries from Sweden by cutting the single railroad, passing through Uleåborg and Torneå.

Russian Defeats. For a time this effort appeared singularly successful; the Russian penetration was deep, and Russian advance forces

pushed past Suomussalmi which they used as a base to Hyrynsalmi, and to Lake Kianta. The Finns allowed them to push out around the lake; then cut their lines of communications, surrounded and attacked the trapped Russians, after allowing the bitter below-zero weather to do its work. The result was a very considerable Finnish victory; on December 29 and 30 the 163rd Red Army Division of some 18,000 men was badly cut up, and it was estimated that many thousands of Russians were killed, wounded or captured. Thus, the two southern prongs of the Russian attempt to cut Finland in two were successfully turned.

Further north, the Finns checked another prong of the drive across their country's middle portion by the same tactics—allowing the Russians to push deep into the inhospitable heart of a desolate country in midwinter, thus attenuating their supply line, and then harassing and attacking them. Fierce fighting occurred east of Kemijaervi, after the Russians had penetrated 67 miles from the Russian frontier, but it ended, even before the Lake Kianta debacle, in a withdrawal to the Salla region, where fighting was in progress as the year ended.

The same story was repeated in the extreme north where Russian land, air, and sea forces, based at Murmansk, attacked the Finnish ice-free port of Petsamo on the Arctic Ocean and finally took it, then pushing southwards toward Nautsi, 70 miles south of the Arctic, which they reached after several weeks' effort, only to retire precipitately with considerable loss and abandonment of much equipment to the Finns as their supply line failed. The exact battle front in the north at the year's end was uncertain, but apparently the Russians were consolidating their forces near Salmijaervi, the abandoned Finnish nickel center near the Norwegian border.

This remarkable series of Finnish successes were due to a variety of causes, chief among them poor organization of the Russian service of supply; Russian military ineptitude and overconfidence; the great difficulty of the Finnish terrain, seamed with lakes and rivers, covered with forests, ideal for the 200,000 ski-equipped Finnish militia, who used their own particular guerrilla methods, light automatic rifles, and short deadly daggers ("puukos") with telling effect. The awful effects of the bitter sub-zero cold, the perpetual Arctic night and the deep snow, also contributed materially to the Russian reverses, and even in the south, where the well-equipped Finnish Regular Army of some 190,000 (war strength), organized in six to ten divisions, held the Mannerheim Line and the area north of Lake Ladoga, the Russian masses were unable to make any appreciable impression.

Situation at Year End. First attacks, however, were probably not made in any such mass as was preliminarily reported; probably only the nine or 10 divisions normally stationed in the Leningrad Military Area were used (with attached units), totalling some 300,000 to 400,000 men. The Russians obviously expected to overawe the Finns by air raids and naval and land attacks; when the opposition stiffened more troops were mobilized, so that by mid-December it was estimated some three divisions or more were in the Murmansk-Petsamo sector; another corps of three divisions with much mechanized equipment was based at Kem; four divisions north of Lake Ladoga, and six to 10 in front of the Mannerheim Line—a total of perhaps 20 divisions. By the year

end the Russian strength had probably grown to 800,000 men; more men were being mobilized; a Soviet "hero," Gen. G. M. Stern, who won a reputation in the Far East, had been assigned to command the bogged-down Russian campaign, and Stalin was obviously determined to press the offensive and save the face of the Red Army.

On the other hand, although the major part of the fighting was still on Finnish soil, the Finnish counterattacks had everywhere been successful (except along the Karelian Isthmus where the lines were stabilized) and Finnish ski patrols had crossed the Russian border and were reported to have damaged at a number of points the single-track Leningrad-Murmansk railroad, vital supply line for the Russian northern armies. Moreover world public opinion was mobilized solidly behind Finland; great contributions of money commenced to flood into Helsinki, and men, planes, and munitions of many nations commenced to funnel in through Sweden.

It was obvious, at the year end, not only that the Russian-Finnish struggle would be a hard one, but that Finland's fate seemed inextricably linked with Europe's. Not only was the "little war" in the north another manifestation of the same fatal sickness that caused the "big war," but both politically and strategically, there was more and more disposition to view the Finnish wilderness of snow and ice as a "flank" of the Western Front.

CASUALTIES AND LOSSES: RUSSO-FINNISH WAR

[Nov. 30–Dec. 31, 1939]

Men

Russia—30,000 to 60,000 killed, wounded, missing and prisoners. (Russian announcement of December 23 put losses at 1823 killed, 7000 wounded; Finns estimated 30,000 Russians had been killed.)

Finland—5000 to 15,000 killed, wounded, etc. (Finnish announcement stated 2000 had been killed; Russian communiqué said 2200 dead Finns had been found on the battlefields up to December 23.)

Planes

Russia—30 to 100; Finland—5 to 20

Ships

Lost: 1 Russian destroyer?

Damaged: 1 Russian destroyer?; Cruiser *Kirov*, 7000 to 7800 tons.

SUMMARY

The first four months of what was rapidly developing at the end of 1939 into a Second World War leave as their military monuments: first, a shattered trail of wreckage and rubble across Poland; and second, a contorted trail of Russian bodies, frozen into waxlike stiffness, across Finland. The "Campaign of the Eighteen Days," that German "Blitzkrieg" remarkable in military annals for its ruthless efficiency and relentless power, immediately changed the course of the war by limiting it—for a time—to one land front. The Russian invasion of Finland, remarkable for the series of defeats so quickly administered to the Red Army, restored a second front to the strategic scene, broadened the theater of war, and started a train of events whose end no man could know.

Note: All tables included in this article are estimates only, except where otherwise specified. It should be remembered that most of the data contained in this article have been strained through the sieve of censorship, although every effort has been made to check and re-check all facts and to avoid coloration or distortion. Polish sources were able, for obvious reasons, to provide little adequate data about the Polish campaign; most of that here presented comes from German sources or from neutral correspond-

cuts. On the other hand a considerable portion of the material used in the section on sea warfare stems from British sources.

HANSON W. BALDWIN.

EVANGELICAL AND REFORMED CHURCH. A denomination formed in 1934 by the merger of the Evangelical Synod of North America and the Reformed Church in the United States. Headquarters, 1505 Race St., Philadelphia, Pa. See RELIGIOUS ORGANIZATIONS.

EVANGELICAL CHURCH. A denomination formed by the reunion in 1922 of the Evangelical Association and the United Evangelical Church. Headquarters are at Harrisburg, Pa. See RELIGIOUS ORGANIZATIONS.

EVIAN CONFERENCE. See INTERGOVERNMENTAL COMMITTEE.

EXPEDITIONS. See GEOGRAPHICAL SOCIETY, AMERICAN; GEOGRAPHIC SOCIETY, NATIONAL; EXPLORATION; POLAR RESEARCH.

EXPENDITURES. See PUBLIC FINANCE; articles on all foreign countries under *Finance*.

EXPERIMENT AND EXTENSION WORK. See AGRICULTURE; DAIRYING; FERTILIZERS; LIVESTOCK; SOILS.

EXPLORATION. For the account of exploration of the polar regions in 1939, see POLAR RESEARCH. Anthropological and archaeological explorations are treated in the articles on ETHNOLOGY and ARCHAEOLOGY. See also GEOGRAPHICAL SOCIETY, AMERICAN; GEOGRAPHIC SOCIETY, NATIONAL.

Asia. Exploration on the Asiatic mainland in the course of 1939 was directed chiefly into the great central mountain area. Several regions in this area, all of them relatively accessible from the British territories to the south, received attention. In the Himalayas, according to the *Voelkischer Beobachter*, three mountain-climbers from Munich, Grob, Paidar, and Schmaderer, accomplished the first ascent of Tent Peak (alt., 24,026 ft.). Less fortunate, Karpinski and Zikiewicz, of a Polish expedition seeking in July to ascend Nanda Devi, a Himalayan peak (25,650 ft.) north of Lucknow, were destroyed by an avalanche at the height of 20,500 feet. An American sportsman, Dudley Wolfe, was reported in August likewise to have lost his life on an expedition of the American Alpine Club, led by Fritz Weissner, attempting the ascent of the so-called K-2, in the western Himalayas, reputedly the second highest of the world's mountains. In the Karakoram range, separating the Vale of Kashmir from Turkestan, Eric Shipton, another mountaineer, with a surveying party, was engaged during the summer and autumn in gathering data for a map of the region on behalf of the Survey of India. While the Himalayan mountain-climbing expeditions in general partook of the nature of sport, they nevertheless also constituted true exploration in that they sought to bring under human observation new territory and new environmental conditions. The activity that had marked, in 1938, the long-persisting effort to scale Mount Everest was not renewed in 1939.

Hasseldt Davis, leading an American expedition on the hunt for scenes of wild life, to serve as subjects for cinematograph films, obtained in Burma pictures of the little-known "leg-rowers," a tribe skilled in a method of wading with the foot the paddles propelling long dugouts used on the Salween River. He also found and filmed a secluded Burmese tribe of snake-worshippers, apparently unknown to whites. In Iraq and Trans-

Jordan, Sir Aurel Stein finished his travels along the course of the ancient imperial Roman frontier. Returning to London he represented his work as completing that done earlier by Father Poydebard in Syria. He reported that he had found the remnants of a line of forts along the sides of the Jebel Sinjar and, between Nisibin and Mosul, old defenses that had commanded the route of ingress from Mesopotamia into northern Syria. A fairly well preserved castle of Roman construction, situated on the middle course of the Euphrates River, offered probable indication that the Roman Empire, about the time of Septimius Severus, had sought to protect the commercial route as far east as central Mesopotamia. On his trip back, Stein retraced the Via Nova of Trajan, from Akaba on the Red Sea to Syria. While largely archaeological, the finds of this expedition had the geographic merit of revealing the possibilities of travel by land in the Near East as developed by an earlier civilization.

Australia. The crossing of the Simpson Desert was accomplished under Dr. Cecil Madigan. This forbidding arid region of some hundreds of square miles had undergone little systematic exploration ever since the disappearance of Leichhardt in its depths in 1848. It extends about the junction of Queensland, South Australia, and the Northern Territory; Madigan had flown over it in 1928. The trip by travel over the surface was said to require the traversing of a waterless stretch of 250 miles. Equipped with the most ancient aid, and the most modern, for desert travel—the camel and the portable radio set—Madigan and his party set out, May 28, from Abminga, heading generally eastward. Their arrival at Birdsville, on the eastern rim of the desert, was reported about a month later. The surface of the route that they had traveled was largely sand, drifted into frequent ridges. In mid-desert, lacking water, the camels refused to eat dry food and seemed likely to succumb from thirst and starvation. Unexpected rain fell at this stage of affairs and renewed the supply of water. Madigan on his return gave no hope that the area could be made useful to human economy; he found little reason from his observations, on the other hand, to apprehend that the arid area would increase.

New Guinea. The exploration of the interior of Dutch New Guinea by Richard Archbold, associated with the American Museum of Natural History, was suspended indefinitely in December, because of the difficulties caused by warfare in Europe and Asia. A base that Archbold had created at Hollandia was given to the government of the Netherlands Indies for use as a laboratory of scientific research. The expedition's flying boat *Guba*, having covered 40,000 miles by air in 700 flying hours, made New York July 1. Leaving New Guinea, she had worked on a marine survey for the Australian government and had thereafter crossed Africa and passed from Dakar over the Atlantic to the Virgin Islands. A summary of the work of the expedition in Dutch New Guinea noted that it had collected 6000 species of plants, about one-fifth of them new to the United States; 15 new species of mammals; and 350 species of birds, of which 20 were new. Archbold ascended Mount Wilhelm and there found a new bird, somewhat larger than a sparrow, bearing a red patch at the throat and having a beak of the flycatcher type.

The expedition into the area of Mount Hagen and the Sepik River, in the Australian mandate

of New Guinea, conducted by J. L. Taylor, concluded its work at the end of June, after a stay of 18 months in the interior. Taylor was quoted as expressing the striking judgment that the interior highland was potentially a "second Kenya," suitable for European settlers and for satisfactory civilized life; this view he qualified by pointing out that it would take time to make the country safe and accessible. The natives of the highland were described as of superior type, possessing a distinctive culture. The Victor Emmanuel range of mountains was crossed by one division of the party at the approximate altitude of 11,000 feet. A pass was discovered, through which the Sepik River traversed the range. About 20,600 square miles of territory in the interior were surveyed, much of it of desirable character, and thousands of inhabitants were found.

North and South America. While North America, except for its Arctic parts, no longer held unknown areas of sufficient interest to invite much exploration of other than the specialized sort, the work of surveying mountainous areas in the northwestern part of the continent was still incomplete. Led by Walter A. Wood, Jr., a party sent by the American Geographical Society continued in 1939 the task of surveying the Mount St. Elias range in the southwestern part of the Yukon Territory. About 1000 aerial photographs of the area of some 2000 square miles were made, and points of reference for future triangulations were established on the surface. The work supplemented that done by Wood in 1935 and 1936.

In South America exploring activity in parts of the highland south of the Caribbean, noteworthy in 1938, made further progress. Dr. Paul A. Zahl completed early in 1939 the expedition, begun in the autumn of 1938, to the isolated area near Mount Roraima, on the confines of southern British Guiana and of Venezuela. Reaching this area by seaplane from the coast, he and a companion traveled for six weeks on foot, spending a week of the time at an Indian village that the natives declared never before to have been visited by white men. The relations of the inhabitants, according to his observation, were exceptionally harmonious and contented. This village was near one of the two high waterfalls previously noted (YEAR BOOK, 1938) as discovered by Dr. Zahl.

Another party, the Cabot Colombian expedition, scaled in March a 19,000-foot peak of the Sierra Nevada de Santa Marta. Earlier parties had explored the northern, or seaward slope of the range, approachable only through a narrow but malarial zone of coastland 25 miles wide. The Cabot expedition, led by Walter A. Wood of the American Geographical Society, started from the seaport of Santa Marta and made a circuit of 250 miles to enter the mountain area from the west, through an intervening stretch of semi-arid paramo. A camp was established at 16,500 feet, where temperature averaged 35 degrees F., and went as low as 15 below zero. Three of the party, Wood, Bakewell, and the Swiss Alpinist Praolini, thence ascended what was judged to be the highest mountain of the range, an unnamed elevation called by the party the East Peak. A German expedition was found to have scaled a neighboring mountain, of approximately the same height, a month earlier.

The Cabot expedition made a brief aerial survey of the range. It brought back 175 photographs of the mountains, chiefly obtained by the oblique method in three hours of flight; these were in-

tended to serve, in combination, for a photogrammetric representation of the range as a whole. The spatial relations of the pictures to points of reference on the ground were obtained by use of theodolite and communication by radio. Animal life in the range's southern area above the 10,000-foot level was reportedly studied for the first time. Collections were made but had yet to be sorted and arranged. The Santa Marta mountains were found to cover an area about equal to that of the State of Connecticut.

In the Brazilian interior Alfred Vialini was engaged in the exploration of the mountainous area near the Serra do Roncador. From Vialini came the report that he had seen the skeletons of Col. P. H. Fawcett, Fawcett's son, and Raleigh Rimmell, who had disappeared in 1925 in the wilderness between the Kuluene River and the Rio Mortes. Another report, from General Ronдон, on his return from a trip in the interior, confirmed, on the strength of word from a chief of the Bacairi Indians, Dyott's information of 1928, that the Fawcett party had been killed by Indians of the Anauqua tribe.

EXPORT-IMPORT BANK (EIB). Export-Import Bank of Washington was created pursuant to an Executive order of Feb. 2, 1934, issued under the authority of the National Industrial Recovery Act. It was incorporated as a District of Columbia banking corporation. The \$1,000,000 par value of common stock is held for the use and benefit of the United States. All common shares, except 11 shares standing in the respective names of the trustees, are held jointly by the Secretaries of State and Commerce in their official capacities.

The entire preferred stock of a par value of \$45,000,000 was subscribed for and purchased by the Reconstruction Finance Corporation.

Public Act No. 1, 74th Congress, as amended by Public Act No. 2, 75th Congress, and Public Act No. 3, 76th Congress, continues the Bank as an agency of the United States until June 30, 1941, or such earlier date as may be fixed by Executive order. Public Act No. 3, 76th Congress, places at \$100,000,000 the amount of loans or other obligations to it which the Bank may have outstanding at any one time and provides that funds shall be furnished through loans from or purchases of stock by the Reconstruction Finance Corporation.

The purpose of the Bank is to aid in financing and to facilitate exports and imports and the exchange of commodities between the United States and any of its territories or insular possessions and any foreign country or its agencies or nationals.

The activities of the Bank increased during the calendar year 1939 but, as theretofore, were principally in two major fields, namely, the financing of the exportation of agricultural commodities and of industrial products.

In addition, however, the Bank agreed to participate with American manufacturers and engineering firms in financing the sale and exportation to certain Latin American countries of equipment, supplies, and services essential to the development of approved projects designed to improve the economy of the respective country and increase its trade with the United States. Credits were extended also to a number of leading South American banks to provide dollar exchange during the interim between export seasons.

Commitments authorized during 1939 totaled

\$74,831,827, of which amount \$46,102,287 concerned trade with Latin American countries. The Bank disbursed \$53,737,746 and received repayments of \$14,695,699. Loans outstanding as of Dec. 31, 1939, totaled \$65,243,237. During the calendar year ended Dec. 31, 1939, net earnings were \$2,344,776.

WARREN LEE PIERSON.

EXPORTS. See IMPORTS AND EXPORTS.

EXPOSITIONS. See FAIRS AND EXPOSITIONS.

EXTRA-SENSORY PERCEPTION. See PARAPSYCHOLOGY.

FAA. Federal Alcohol Administration (q.v.).

FAIRBANKS, DOUGLAS. An American actor, died in Santa Monica, Calif., Dec. 12, 1939. Born in Denver, Colo., May 23, 1883, the son of H. Charles Ulman, he was educated at the Colorado School of Mines, and, for a short time, at Harvard University. His stage debut was made in *The Duke's Jester*, Sept. 10, 1900. Soon thereafter he legally changed his name to Fairbanks. In 1901 he made his New York debut in *Her Lord and Master*, and after a trip abroad and a short business career, he appeared in *Frenzied Finance* (1905). His subsequent stage appearances were in *All for a Girl* (1908); *A Gentleman from Mississippi* (1908), in which he toured the country for two years, and *Gentlemen of Leisure* (1911). By this time he was one of the leading juveniles of the American theater. Under the management of Cohan & Harris he had leading roles in *Hawthorne of the U.S.A.* (1912), *Henrietta* (1913), *Comes Up Smiling* (1914), and *Show Shop* (1914).

He then quit the stage for Hollywood and made *The Lamb* for D. W. Griffiths. He appeared in *Double Trouble*, *The Americana*, etc., and in 1917 formed the Douglas Fairbanks Pictures Corporation and produced a number of films. In 1919, with D. W. Griffiths, Charles Chaplin, Mary Pickford, and Charles Ray, he formed the United Artists Co. Each actor was to produce his own picture but to release it through the company as a distributing unit. Then began the period of his greatest popularity. He produced romantic fantasies, in which he, as the hero, rode horses, scaled walls, leaped from windows, and made sensational escapes. These films, in which he introduced technical developments and improvements, elaborate sets, and color, included *The Mark of Zorro* (1920), *The Three Musketeers* (1921), *Robin Hood* (1922), *The Thief of Bagdad*, *Don Q*, *The Black Pirate*, and *The Gaucho*.

With the advent of the "talkies," his star waned. In 1929 he made *The Taming of the Shrew*, co-starring with Mary Pickford. Thereafter he devoted himself mostly to travel, but reappeared in *Reaching for the Moon* (1931), *Mr. Robinson Crusoe* (1932), and his last picture, *The Private Life of Don Juan* (1934). Shortly before his death he announced that he would return to motion pictures as a producer, his first film being an adventure picture to end all adventure pictures.

One of the most spectacular of screen stars, Fairbanks was known throughout the world for his powerful physique and flashing smile. He was married three times; first, to Beth Sully in 1907, by whom he had one child, Douglas Fairbanks, Jr., and from whom he was divorced in 1919; second to Mary Pickford in 1920, from whom he was divorced in 1935; and third, to Lady Sylvia Ashley in 1936.

FAIR LABOR STANDARDS ACT. See CHILDREN'S BUREAU; LABOR CONDITIONS; WAGE AND HOUR DIVISION.

FAIRS AND EXPOSITIONS. In the field of expositions, the United States attracted the greatest interest in 1939 with two major events occurring simultaneously on opposite sides of the continent, in New York and San Francisco. A separate article in this volume is devoted to each of these two expositions. (See GOLDEN GATE INTERNATIONAL EXPOSITION and NEW YORK WORLD'S FAIR.) In co-operation with the Golden Gate Exposition, 19 northern California counties opened on May 1 the Sacramento-Golden Empire Centennial, celebrating the hundredth anniversary of the founding of California's capital city by Capt. John A. Sutter, Swiss pioneer. The historic Sutter's Fort, fully restored, and a reconstructed mining town of the days of Forty-Nine were opened to the public. Another celebration of historical nature in the United States was the Pan-American Hernando de Soto Exposition, which opened in Tampa, Florida, in February.

The founding of the United States of Brazil was celebrated in November, with President Vargas addressing a vast throng in Rio de Janeiro at the exact hour on which Emperor Pedro II had been deposed fifty years before. The United States sent six army "flying fortresses" on a good-will flight to Brazil, bearing a message of felicitation from President Roosevelt. One plane was disabled, but the other five arrived at Rio de Janeiro as scheduled on November 15, having completed en route the first non-stop flight between Lima and Asunción.

A leading event in Europe was the Swiss National Exposition held in Zurich, May 6 to October 29. The exposition, which occurs only once in every 25 years, was designed to show the evolution of Switzerland and included displays of every phase of national activity, both industrial and cultural. Zurich, the crossroads of the various cantons, offered a setting of great natural beauty along two sides of a lake. Folk plays and dances, opera, and various fetes featured the entertainment. A system of canals, winding through the exhibition halls and enabling visitors to see the exhibits from boats, proved to be a profitable innovation. Attendance at the exposition was approximately 10,000,000 although only 4,000,000 visitors had been anticipated originally. See ARCHITECTURE.

The first exposition in history to be devoted exclusively to water was the International Water and Waterways Fair, opened at Liège, Belgium, on May 21 by the five-year-old Prince Albert in his first official ceremony. Coinciding with the inauguration of the great Albert Canal, the exposition treated as its theme the relation of water to many phases of human activity. The grounds covered 250 acres on both sides of the Meuse River and contained an extensive Lido used for aquatic sports and competitions, a two-mile aerial cable railway, and an elaborate festival palace. Although the Fair was curtailed to only ninety days because of the European War, it closed without a deficit.

In addition to the usual annual events in Europe, attention was attracted to an International Exposition of Good-Will, or "Work and Joy" Exposition, which opened in Rumania in June. In the Far East, China celebrated its fifth anniversary of the "New Life Movement" with a two-week exposition at Chungking in February.

The first American-style cafeteria in China was opened for the exposition which, in many respects, resembled an American county fair. New Zealand celebrated its first century of existence with a Centennial Fair which was opened at Wellington on Nov. 8, 1939.

Prominent on the calendar for 1940 are the reopening of the New York World's Fair (q.v.), and an International Exposition for Polar Exploration scheduled for May at Bergen, Norway, in which all countries prominent in polar exploration have been invited to participate. Large-scale plans for the 1942 world's fair in Rome were well under way in 1939. Designated the "Universal Exposition of Rome," it will have as its theme "The Olympics of Civilization" and as its dominating structure a gigantic Roman arch symbolizing human will. The buildings are designed to be a permanent contribution to the enlargement and improvement of Rome and will accommodate 40,000 residents after the Fair is over. A four-mile super-highway, 109 yards wide, is to connect the exposition grounds with Rome. In September, Premier Mussolini gave instructions for the work to proceed as planned despite the international situation. See ARCHITECTURE.

FALKLAND ISLANDS. A British crown colony in the South Atlantic, comprising East Falkland, West Falkland, and adjacent islands. Total area, 4618 square miles; population (Jan. 1, 1938), 2391. Stanley (capital), had 1200 inhabitants in 1936. Sheep farming is the main occupation of the people. In 1937 imports were valued at £116,752 (provisions, £23,039; hardware, £21,133; timber, £6452); exports, £204,020 (wool, £162,511; hides and skins, £17,923; livestock, £13,773; seal oil, £4200; tallow, £2618). Finance (1938): revenue, £91,720; expenditure, £80,945. The government is headed by a governor, advised by an executive council of 5 official and 2 unofficial members. There is a legislative council of 4 official and 4 nominated unofficial members. Governor and Commander-in-Chief, Sir Herbert H. Heaton (appointed Jan. 3, 1935).

Dependencies. The dependencies of the Falkland Islands include South Georgia (1450 sq. mi., statute; population, approximately 700 in the summer and 233 in the winter), South Shetlands, South Orkneys, South Sandwich Islands, and Graham Land. Whaling (October 16 to April 16) and sealing (March 1 to October 31) are the chief occupations. During the 1936-37 season, 1759 whales were caught. The production of whale oil in 1937-38 amounted to 166,606 barrels. In 1937, total imports (including importations for re-exportation) amounted to £371,223; total exports (including re-exports of £182,764), £406,640 (whale oil, £305,049; guano, £34,328; seal oil, £32,496; whale meat meal, £26,044). Finance (1938): revenue totaled £15,545; expenditure, £13,829.

The dependencies are subject to the authority of the governor and to the executive and legislative councils of the Falklands.

History. Stanley, Falkland Islands, since the outbreak of war in Europe in September of 1939, has become the headquarters of British naval operations in the South Atlantic and the South Pacific. Several German merchant ships which left South American ports since the start of the war were said to have been captured by the British and taken to the Falkland Islands.

FAMILY INCOME AND EXPENDITURES. See LIVING COSTS AND STANDARDS.

FAR EASTERN TERRITORY. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

FARM CREDIT ADMINISTRATION (FCA). Operating through 12 district offices, the Farm Credit Administration provides a complete and co-ordinated credit service for farmers and their co-operative business associations. Each district office is composed of four units—a Federal land bank, a Federal intermediate credit bank, a production credit corporation, and a bank for co-operatives.

The 12 Federal land banks, operating since 1917 under the Federal Farm Loan Act and subsequent legislation, make amortized long-term first mortgage loans to farmers through 3700 local national farm loan associations. Loans outstanding on Jan. 1, 1940, aggregated \$1,900,000,000 plus \$700,000,000 of Land Bank Commissioner loans made by the land banks as agents. Commissioner loans, first authorized in 1933 for emergency financing, are made on both first and second mortgage security.

The total capital of the Federal land banks was \$236,521,270 on Sept. 30, 1939. Slightly less than one-half of this amount was owned by national farm loan associations and individual farmers borrowing directly from the banks. The remainder was provided and is owned by the United States Government.

The 532 production credit associations, organized, capitalized, and supervised by the 12 production credit corporations, in accordance with the Farm Credit Act of 1933, made farm production loans totaling \$323,700,000 in 1939 compared with \$302,600,000 for the previous year. Typical purposes for which these loans were used include the purchase of seed, feed, fertilizer, spray materials, farm machinery, work stock, cattle, sheep, household equipment, and the hiring of labor.

Capital stock owned by farmer members of production credit associations increased from \$14,211,535 to \$15,312,915 from Sept. 30, 1938, to Sept. 30, 1939. On the latter date 17.6 per cent of the total par value of stock outstanding was owned by farmer members and the remainder was owned by the production credit corporations.

The 12 banks for co-operatives and a Central Bank for Co-operatives, established under the Farm Credit Act of 1933, make facility, operating capital, and commodity loans to farmers' co-operatives. Loans made in 1939 aggregated \$82,900,000.

The 12 Federal intermediate credit banks, organized in 1923 by the Agricultural Credits Act of 1923, operate as banks of discount. They are authorized to make loans to, and discount paper for, production credit associations, banks for co-operatives, state and national banks, livestock loan companies, and similar financing institutions. Loans and discounts made during 1939 aggregated \$474,600,000. The capital and surplus of the 12 banks (\$100,000,000) is owned by the United States Government.

Loan funds of the permanent institutions operating under the supervision of the Farm Credit Administration are obtained primarily from the sale of tax-exempt bonds and debentures to the investing public. These are not guaranteed by the United States Government. Farm loan bonds of the Federal land banks outstanding on Sept. 30, 1939, totaled \$1,776,696,040; Federal intermediate credit bank debentures aggregated \$205,300,000. Land Bank Commissioner loans are financed from the sale of Government-guaranteed

bonds of the Federal Farm Mortgage Corporation.

The emergency crop and feed loan offices, also operating under the supervision of the Farm Credit Administration, loaned farmers \$15,191,000 in 1939. These loans are made from appropriated funds. The Farm Credit Administration is also responsible for the supervision of the Federal credit union system.

Besides its activities which are primarily concerned with financing farmers and farmers' business co-operatives, the Farm Credit Administration carries on research. The Co-operative Research and Service Division of the Washington, D. C., office conducts research studies relating to problems of farmers' co-operative marketing, purchasing, and service associations. The results of these studies are published in bulletin form. Another division—Economic and Credit Research—works on projects relating to credit.

Headquarters of the 12 districts are located in Springfield, Massachusetts; Baltimore, Maryland; Columbia, South Carolina; Louisville, Kentucky; New Orleans, Louisiana; St. Louis, Missouri; St. Paul, Minnesota; Omaha, Nebraska; Wichita, Kansas; Houston, Texas; Berkeley, California; and Spokane, Washington. See AGRICULTURE; AGRICULTURE, U.S. DEPARTMENT OF.

E. B. REID.

FARM MACHINERY AND EQUIPMENT. Although demand was retarded by the decline of farm product prices in 1938 and 1939, progress in the mechanization of agriculture was continued despite the shrinkage in the farmer's cash income. Investigators, inventors, and manufacturers carried their work forward with the general objective of providing the farmer with tools, implements, and machines of greater efficiency, better suited to his needs and meeting more of his requirements. As in preceding years the U.S. Department of Agriculture and the agricultural experiment stations played an important part in these activities.

During the year attention continued to be centered, among other problems, on artificial hay drying, the use of the Diesel engine in farm machinery and for other farm power purposes, the displacement of steel tires on farm wagons and machines, especially tractors, the wider use of electricity on the farm and in the farm home, the refrigeration requirements on the farm especially where dairying is the leading activity, machines and implements called for by the great national movement in soil conservation, mechanical equipment suitable for the small farm, and combination equipment of increased capacity and performing effectively multiple operations at one and the same time for farms of larger acreages.

Machines, implements, and devices which have recently come into use or are passing through the final stages of trial include hay driers, a sugar-cane cutter, a machine for picking up stones and potatoes, a bean cultivator and harvester, a large-scale nut cracker, a hop picker, a push-type harvester for peas and other canning crops, automatic and other plow hitches, and other similar forms of farm equipment.

The artificial hay drying systems under development provide for the drying of hay as it comes from the field or after it is placed in the mow. The mechanical sugar-cane cutter, appearing for the first time in 1939 in larger numbers in the Louisiana cane fields, cuts and loads an

acre of cane in an hour which represents ten or more man-days of work when done by hand. The bean cultivator and harvester can be used for preparing the soil and cultivating and harvesting the crop. An attachment to a corn planter for planting twin rows of soy beans six inches apart has also come on the market recently.

At the request of the California Walnut Growers Association the California Agricultural Experiment Station is developing an improved method of cracking nuts on a commercial scale. This method involves the mechanical puncturing or cutting of the shells to admit a gas mixture which when exploded shatters the shell and separates it from the kernel. At the present stage of development about 900 lb. of walnuts can be cracked per hour. The hop-picking machine is said to enable seven hands to do the work of fifty or more hand-pickers.

An automatic plow-hitch for tractors is reported to make it possible for the plow to strike stones with light impact and, under favorable conditions, to slide over the obstruction and, when its point goes under a heavy stone, to bring the tractor to a halt. A simpler plow-hitch recently devised counteracts the down-hill pull when plowing contour terraces now quite generally constructed to prevent soil erosion.

The farm tractor continues to receive attention to adapt it better for meeting all farm requirements. Tractors now are used for nearly all kinds of farm work and recently special tractors for use in orchards and in rice fields have become available. Pneumatic tires are made so they can be placed readily on the steel tractor wheels after removing the customary lugs. An estimate by the Farm Implement News places the number of tractors on farms in the United States as of Apr. 1, 1939, at 1,625,820 with 1,332,422 of this number in the 17 leading states, among which Illinois stands first with 146,971, Iowa second with 133,410, and Texas third with 107,696.

The Colorado Agricultural Experiment Station in co-operation with U.S. Department of Agriculture is working on the development of a single-seed sugar-beet planter with the objectives of eliminating or at least reducing the thinning of the beets to a proper stand and of obtaining a more uniform spacing of the plants. It is thought that single-seed plates may be devised for insertion in the type of planters now in use to obtain the desired results.

For many years the United States has been a leader in the export of farm machinery and implements, but during the last decade Germany became increasingly important in this field. According to figures published by the U.S. Department of Commerce the ratio of such exports by the United States and Germany was 7 to 1 in 1929, 5 to 1 in 1937, and 4 to 1 in 1938. This increasing rate of German export was arrested by the outbreak of war during September of 1939.

J. I. SCHULTE.

FARMS AND FARMING. See AGRICULTURE and the topics there referred to.

FARM SECURITY ADMINISTRATION (FSA). The Farm Security Administration was created by the Secretary of Agriculture on Sept. 1, 1937, as successor to the Resettlement Administration. Its purpose is to help farm families on, or near, relief to become permanently self-supporting. Since 1935, when this type of assistance was first given under the authority of

the Resettlement Administration, financial aid has been extended to more than 1,231,000 farm families. The work is divided into three phases.

Rehabilitation Program. Farmers unable to obtain adequate credit from any other source may receive small loans from the Farm Security Administration which will enable them to continue farming. These loans, based on sound farm and home plans, averaged \$397 each during the past fiscal year. They usually are just large enough to enable the farmer to buy seed, tools, livestock, fertilizer, and the other equipment he needs to make a living. The loans draw 5 per cent interest. At the close of the year, the number of active rehabilitation loan cases totaled 589,046.

A survey made at the end of the 1938 crop year showed that standard rehabilitation borrowers had increased their net worth—over and above all debts—by an average of \$269, or 37.4 per cent, since coming on the program. Between 1935 and the end of the 1939 fiscal year, 101,133 debt-burdened farmers had been able to work out amicable adjustments with their creditors through the help of voluntary committees of local citizens appointed by the Farm Security Administration. Debts were scaled down about 25 per cent.

Community service loans often are made to groups of farmers in the same neighborhood to enable them to buy equipment or services no one of them could afford alone. During the past fiscal year 4333 such services, of 72 different types, were established. These involved approximately \$3,054,000 and are serving 107,059 families.

As of June 30, 1939, county or district plans for group medical care for nearly 100,000 needy farm families were in operation in 23 states. Agreements had been reached with State medical associations in six other states for the establishment of similar county medical care programs.

In areas stricken by drought, flood, or hurricane, the Farm Security Administration makes subsistence grants to destitute farm families. These average about \$20 per month per family. During the past year the total cash grant disbursement to individual families amounted to about \$22,758,444.

Tenant Purchase Program. The tenant purchase program, authorized by the Bankhead-Jones Farm Tenant Act in 1937, enables a limited number of farm tenants and laborers to obtain loans to buy farms of their own. Congress appropriated \$25,000,000 for this purpose for the 1939 fiscal year, and 4340 loans were approved in 732 counties. These loans included money for building 1610 new dwellings, costing an average of \$1313. In addition, repairs were made on 2556 tenant-purchase farm dwellings; and barns and outbuildings were constructed on 4146 farms. Repayment of tenant-purchase loans extends over a period of 40 years at 3 per cent interest. An appropriation of \$40,000,000 was made for this program during the fiscal year. It was expected to provide for almost 7000 loans.

Homestead Projects. The Farm Security Administration administers 161 homestead projects which were turned over to it by the Resettlement Administration and other predecessor agencies. They are scattered throughout the country and vary in type; some having small individual farms, others having co-operative enterprises, and a few having industrial plants to supplement farm income. These projects provide homes for almost 14,000 families.

The FSA has established 26 permanent and 6

mobile camps to provide sanitary living conditions for a small part of the army of migratory agricultural workers. At the end of the fiscal year, the Administration had in operation 1432 tent platforms, 749 shelters, and 166 labor homes. It had under construction 1388 tent platforms, 3414 shelters, and 660 labor homes. When the present program is completed, the camp facilities will serve 7809 families at one time.

W. W. ALEXANDER.

FAROE (FAEROE), fär'ö or fä'rö, ISLANDS. A group of 21 islands (the chief being Bordö, Kalsö, Österö, Sandö, Strömö, Suderö, Vaagö, and Viderö) north of Scotland, forming a county of Denmark. Total area, 540 square miles; population (1935), 25,744. Capital, Thorshavn (on Strömö), 3200 inhabitants. The chief exports consist of fish, whale oil, woollen goods, lambskins, and feathers. A prefect, named by the King of Denmark, heads the administration. The local parliament (Lagting) of 25 members elects a member to the Danish Landsting (upper house), and the people elect, by vote, a member to the Danish Folketing (lower house).

FARRAND, LIVINGSTON. An American educator, died in New York, Nov. 8, 1939. Born in Newark, N. J., June 14, 1867, he was educated at Princeton University (A.B., 1888) and at the College of Physicians and Surgeons (M.D., 1891). Until 1893 he studied abroad at Cambridge University and the University of Berlin, and upon his return joined the staff of Columbia University as an instructor in psychology. Successively he was adjunct professor of psychology (1901-03) and professor of anthropology (1903-14). During this latter period he went on two expeditions of the American Museum of Natural History to study the Indians of the American Northwest, and his writings at that period dealt principally with the anthropology of the American Indian.

His medical training led to his interest in tuberculosis and methods of fighting the dread disease. In 1905 he became the executive secretary for the National Association for the Study and Prevention of Tuberculosis, and in 1912 he was elected treasurer of the American Public Health Association, and editor of its *Journal*. His election as president of the University of Colorado on Jan. 1, 1914 led to his giving up these offices. While in the West he greatly elevated the standards of the University and reorganized its Medical School. In 1917, he obtained a leave of absence to go to France as director of tuberculosis work in that country under the auspices of the International Health Board of the Rockefeller Foundation. For his work in this field he was made an Officer of the French Legion of Honor. His familiarity with the work of the American Red Cross led to his appointment by President Wilson as chairman of its Central Committee in 1919, and he resigned from the University to take over this work. Under his directorship the great work of transition from war to peace was made and relief work done among the civilian populations of Europe.

In 1921, Dr. Farrand was elected president of Cornell University. Under his regime the building program of the University was continued, and many changes made in the curricula. In 1937 upon reaching the age of 70 he was retired as president emeritus. Thereafter he was active in making a special survey of the Public Health Schools of New York in association with the Surgeon General of the United States.

Dr. Farrand served as a member of a committee making a survey of agricultural conditions in Puerto Rico in 1928, and headed the New York State Health Commission (1932), being a firm advocate of the adoption of health insurance. In 1932 he was elected chairman of the Board of Trustees of the Carnegie Foundation for the Advancement of Teachers and two years later went on expedition to Yucatan to study the Mayan ruins. His work in many fields brought him numerous honorary degrees. Outstanding among his writings was *Basis of American History* (1904).

FASCISM. The sensational advances registered by world fascism during 1938 (see 1938 YEAR BOOK, p. 243 f.) continued during the first half of 1939. But the announcement of the German-Soviet non-aggression pact on August 21 fell like a thunderbolt in the Fascist ranks, shattering the pro-Fascist anti-Comintern bloc built up by Chancellor Hitler during preceding years and introducing deep divisions among the Fascist states that remained unhealed at the year end.

Fascist Successes. The advancing surge of fascism culminated in March of 1939 in a series of world-shaking successes. On February 24 Hungary and Manchoukuo joined the ranks of the anti-Comintern bloc. On March 15 Hitler seized Bohemia and Moravia. In subsequent days he established a protectorate over Slovakia—which openly joined the Fascist states—and seized Memel from Lithuania. On March 19 the French Parliament granted Premier Daladier dictatorial powers to deal with the increasingly critical European situation. Then came the resounding Fascist triumph in Spain on March 28 when Madrid capitulated to General Franco and his Italian and German allies. On April 7 General Franco announced Spain's adherence to the anti-Comintern pact. The following day Mussolini invaded Albania, annexing it to Fascist Italy. On May 22 Mussolini and Hitler transformed their political entente into a seemingly hard-and-fast military alliance.

These sensational gains, won by Fascist methods and policies, gave further powerful impetus to the movement. Hitler's successive coups in March increased Nazi prestige throughout central and southeastern Europe and strengthened Fascist movements in Bulgaria, Hungary, Rumania, and many other countries. Repercussions were seen in the substantial gains registered by the Hungarian Nazis in the elections of May 28-29; in the further subordination of Catholic Action to the Fascist party in Italy in July; and in the unsuccessful Iron Guard conspiracy in Rumania in September. Under the influence of European fascism's rapid progress, Japan was drawn toward a military alliance with Germany and Italy.

Propaganda in Americas. The conversion of Spain into a Fascist state had particularly far-reaching effects in Latin America. Under the supervision of the Franco Government, Spanish Fascists in many New World republics were organized as units of the *Falange Española* to promote the restoration of a Spanish Empire comprising all the Spanish-speaking nations. In some of the American countries they formed alliances with native Fascist and anti-democratic groups, and with foreign elements engaged in promoting the interests of Germany, Italy, and Japan at the expense of the democratic powers. The Spanish Fascist movement obtained powerful support from some leaders of the Roman Catholic clergy in Latin America.

The United States and the Pan American move-

ment bore the brunt of the Fascist propaganda offensive in Latin America. But it was also directed at native radical, liberal, and democratic movements and at British and French economic and political interests. This propaganda war, waged by radio, press services, moving picture films, and through diplomatic and consular offices of the Fascist countries was replied to in kind by anti-Fascist groups in the Latin American countries and by the democratic powers. The struggle was waged in every country and in every inter-American conference during the year, increasing in intensity after the outbreak of the European War in September. Even after the Nazi-Soviet rapprochement in August, the Italian and Spanish-owned press in Latin America remained strongly pro-German.

Activities in United States. In the United States, Canada, South Africa, and other parts of the world the Fascist and Nazi successes in Europe likewise had the effect of spurring the enthusiasm and activity of like-minded groups. This was reflected in the increased attention attracted by Father Charles E. Coughlin's radio broadcasts, the anti-Semitic activities of the Christian Front and other pro-Fascist groups in the United States, the growing boldness of the German-American Bund, and the prominence achieved by Gen. George Van Horn Moseley, U.S.A. retired, as a prospective leader of a Fascist movement in the United States. Testimony taken by the Dies Committee served to inform the country regarding the policies and programs of the various Fascist groups and their leaders.

In a preliminary report on Nazi and Fascist groups in the United States published August 31, the Dies Committee declared that their "primary aims appear to be (1) a radical change in the American form of government and (2) the collection of dues from such misguided citizens as will support them." It reported that these organizations had "borrowed some or all of the ideology of European fascism," and that "these groups are engaged in a form of racketeering, as well as in subversive activity." Other excerpts from the report follow:

In these times, when democracy is harassed from many sides, peewee Hitlers, aspiring Fuehrers and would-be Caesars have arisen in our midst urging our people through an unprecedented volume of propagandistic literature to resort to force and violence against large sections of our population.

We call special attention to the deplorable prostitutions of such words as "patriotism" and "Christian" to the selfish ends of these fascist racketeers.

Like Hitler, these American Fascists make their chief appeal to the basest forms of race hatred.

Like Hitler, they promise to deliver this country from the menace of communism. Like Hitler, they heap scorn upon the institutions of democracy. Like Hitler, they urge the short cuts of force and violence.

The testimony which our committee has heard reveals a widespread co-operation between half a hundred of these Nazi-Fascist groups. Interchange of speakers and literature is common.

On several occasions in recent months they have endeavored to come together in some kind of a permanent federation. So far these efforts have been frustrated by organizational jealousies, but the search for a "man on horseback" goes on.

Taking cognizance of these developments, 2391 American educators and publicists on April 23 issued a manifesto calling attention to "the threat to democracy inherent in demands for retrenchment in education, in attacks on the Bill of Rights, in gag laws, in censorship of teachers and journalists, in racial and religious intolerance, in those newspapers which make profit or power their chief goal."

Anti-Fascist Reaction. The rapid advance of Fascist influences the world over provoked a counter-offensive from anti-Fascist forces. Among the developments adverse to fascism in Europe during the year were the replacement of the pro-Fascist Stoyadinovitch Government in Yugoslavia on February 4; the abandonment of Prime Minister Chamberlain's appeasement policy in March after the Nazi seizure of Bohemia and Moravia, and the formation of an Anglo-French "stop Hitler" bloc; the crushing defeat of both Fascist and Communist parties in the Belgian elections of April 2; the dissolution of another Nazi party in Bulgaria on April 11, and subsequent measures in Hungary and the Balkan countries to curb Nazi-Fascist propaganda.

The Nazi-Soviet non-aggression pact of August, German-Russian despoliation of Poland, and Germany's action in turning over the Baltic States to Bolshevik Russia aroused resentment and dismay in Spain, Italy, Japan, and in all of the other countries of the world with the exception of Bulgaria, Germany, and the Soviet Union. The anti-Comintern pact was, for the time being, annulled. Italy refused to join Germany in war with Britain and France. Japan decided not to conclude the projected alliance with Germany and Italy. Spain adopted a policy of neutrality in the European conflict. The propaganda in Latin America emanating from Germany, Italy, and Spain showed an increasing tendency to back-fire, while native democratic forces were strengthened and the carefully planned campaign inaugurated by the United States Government for closer economic, political, and cultural ties with the Latin American republics made substantial headway.

In the United States Federal, State, and local authorities late in 1939 returned indictments against a number of Fascist leaders and members charged with violations of the law. Fritz Kuhn, Fuehrer of the German-American Bund, was found guilty of grand larceny and forgery by a New York City jury on November 29 (see NEW YORK CITY). Three members of the Silver Shirt League of America were convicted of malicious mischief in Chicago on December 29 for throwing bricks through windows of a Jewish-owned department store. The Federal Bureau of Investigation began an inquiry into the Christian Front and other extremist groups. A series of decisions of the U.S. Supreme Court tended to curb the anti-union activities of Mayor Frank Hague of Jersey City and ordinances and activities of other municipalities and groups that were described as anti-democratic.

See each of the countries mentioned above and ARGENTINA, BOLIVIA, BRAZIL, CANADA, CHILE, CHINA, COLOMBIA, CUBA, DENMARK, ESTONIA, FINLAND, GREECE, LATVIA, LITHUANIA, MEXICO, NETHERLANDS, SWEDEN, and SWITZERLAND under *History*; COMMUNISM; DEMOCRACY; DIES COMMITTEE; PAN AMERICANISM.

FASHION EVENTS. Fashion is the impetus which gives life to one of America's major industries. The designing, manufacturing, merchandising, and advertising of women's apparel and its subsidiary businesses represent a larger volume of business than that of the automobile industry.

Some of the various enterprises which make up the fashion business may be divided into the following sections: Textiles and Trimmings; Ready-to-wear dresses, coats, suits, blouses; Lingerie; Corsets; Furs; Stockings; Shoes; Costume Jewelry; Handbags and Accessories; Cosmetics and Perfumes; Millinery.

The department store and specialty shop are the principal outlets for this merchandise, with drug stores, beauty shops, and chain stores selling approximately 48 per cent of cosmetics and perfumes. These retail outlets are organized into buying groups and maintain joint offices and resident buyers in New York which is the chief market and manufacturing centre for all women's wear. However, there is a new and increasing trend toward the establishment of apparel factories in the middle west and on the west coast.

Retail stores send their merchandise managers and buyers to the "Seventh Avenue Market" several times a year. This market takes its name from the street in New York on which it is chiefly located. There, manufacturers maintain show rooms for display and sale. A Fashion Forum, at which next season's fashions are shown, is conducted by Tobé, a woman who has achieved such important success as a fashion advisor that she is retained by more than one hundred stores throughout the United States. The personnel of these patron stores attend the forums and are further guided by Tobé's reports, mailed to them every week.

Fashion Press. Two other important selective forces are at work in this fashion world: *Vogue*, edited by Edna Woolman Chase and published in New York, London and Paris, and *Harper's Bazaar*, edited by Carmel Snow and published in New York and London. Their editorials endeavor to separate the wheat from the chaff and their advertising pages are the chief mediums of propaganda employed by manufacturers. Fashion information is also published in women's magazines of large circulation, *McCall's* being an important source for patterns for home sewing. *Women's Wear*, a daily newspaper published in New York and edited by Winifred Ovitte, is a leading trade publication.

Important to the promotion of fashion are the stories published on the Woman's Pages of newspapers. They are written in the fashion centres of New York and Paris and by local reporters who are becoming increasingly important.

Fashion Design. Paris continues, as it has been for generations, to be the creative fashion source. The collections of the designers, Schiaparelli, Alix, Molyneux, Lelong, Chanel, Lanvin, Vionet, Pacquin, Mainbocher, are shown four times a year as are those of the milliners, Suzy, Talbot, Agnès, and are attended by resident buyers, store representatives from America, and by the press.

In America, design still remains adaptive rather than creative. Since 1931 the recognition of American designers has been actively promoted by Dorothy Shaver. In 1937 an annual award consisting of four \$1000 prizes for distinguished design was instituted by Lord & Taylor, New York Department Store, of which Miss Shaver is 1st vice president. Awards are given on any type of merchandise for which there is a consumer demand. In April 1939 the winners for the previous year were announced. They were Raymond Lowey, refrigerator; Walter Dorwin Teague, cash register; Adrian, Women's Fashions; Merrie Hull, free action glove.

Fashion Advertising is presented via magazines, newspapers, display, and radio, but television has not yet become the power it may reach. Window and interior display is increasing in importance. The magazines, *Vogue*, *Fortune*, *Collier's*, alert to the consumer's interest, published stories about the "Sidewalk Show." During 1939

display reached new heights of drama, humor, imagination; leading artists took part in its production. Mannequins used to display apparel were made to conform to the new silhouette and sometimes actually wore current cosmetic colors. The impetus given fluorescent lighting by the New York World's Fair resulted in a revolutionary development in store lighting and displays which will be felt for many years to come. It is estimated by Alfred Bliss, a leading exponent of modern display methods, that now the national expenditure for store displays has mounted to two million dollars and employs about ten thousand people, largely men.

Fashion Organizations. The Fashion Group, a non-commercial organization of professional women, organized in New York now has eight regional groups located in principal cities throughout the United States and a total membership of 980. Louise Paine Benjamin, associate editor of the *Ladies Home Journal*, is the president. Luncheon meetings are held monthly at which various phases of fashion are discussed by prominent speakers. The purpose of the Fashion Group is to "advance the principles of applied art in industry and to foster good taste in fashion; to encourage the co-operation of those engaged in conceiving, designing, and executing fashions; and, through proper education and the dissemination of useful information, to inspire a keener interest in fashions, to the end that those engaged in the field of fashion may better serve themselves and the public at large."

Fashion Developments. Change is vital to the fashion business; it sets the wheels in motion. So we find that in the spring of 1939 Fashion was characterized by a little-girl air of innocence, with the symbols of Victorian childhood in favor. By autumn, Fashion adapted a mature elegance with strong Edwardian tendencies. In the spring the silhouette showed waists dwindling, hips expanding. The diaphragm was built up and the bust appeared high and rounded. In August, the laced corset, sponsored by Mainbocher, proved the sensation of the Paris openings, and the size of a woman's waist was aptly described by the word "wasp." Full skirts gave place to a pencil silhouette and the bustle to front drapery.

The Color Spectrum followed the trend to sophistication. The spring pastels resolved into shadowy, muted tones. As the popular favorite, a military red took first rank. Trimmings lent a new magnificence. Old-time passementerie became the vogue along with gilt braids, jewelled embroideries, and quantities of fur. Spring hats were diminutive with enveloping veils coyly framing the face, then as the coiffure moved downward hats grew larger and snoods covered all the hair. Jewelry assumed exceptional importance.

Early in the year cosmetics abandoned the purple tones of 1938 for rose shades, then for clear reds. Every smart woman had at least three lipsticks. Bathing requisites enjoyed an amazing popularity and outsold perfumes, with bright, fresh, wood-like scents, such as pink clover, enjoying the highest favor.

The shoe revolt occurred in the late spring. Women literally refused to wear the toe-less, heel-less shoes which manufacturers and stores promoted. Shoes became lighter, almost seamless, heels and soles were geometrically planned.

The reefer, with lapels, was in high favor largely due to the handsome appearance made by the actor, Lawrence Olivier, in his great coat

worn in the cinema, *Wuthering Heights*. In fact, this was but one feature of an increasing trend toward the adaption of male fashions by women. Hollywood's fashion influence continued strong. The exotic beauty of Hedy Lamarr lent turbans and pearls new emphasis. In February, *Glamour*, a magazine of Hollywood fashions published by Condé Nast appeared, and by October had achieved the largest newsstand circulation of any fashion magazine. In the theatre the Portuguese singer, Miranda, brought about the renaissance of many strands of beads and bib-size necklaces.

Always an important fashion influence, the American college girl, declared her preference for shorter skirts, longer sweaters, and her socks mounted from the ankle to the knee. The casual mode preferred for class went into brilliant reverse on formal occasions. Then even the simplest dress was lifted, by the imaginative use of accessories such as elaborate costume jewelry, flower headdresses, mantillas, to the importance of a toilette.

World events always have strong fashion influence and this year was no exception. Overnight the umbrella carried by Chamberlain to the Munich Conference became an essential accessory to every chic costume. The visit of the Queen of England to America brought a faint revival of the parasol and strongly initiated the ankle-length formal afternoon dress. The exhibit in Geneva of the paintings of Goya and Velasques gave inspiration for hairdresses copied from their portraits. The Spanish silhouette with bouffant skirts and tight bodices, but interpreted in rich glowing colors gained immediate favor and their designer, Balenciaga, quickly rose to a top place. The brilliance and the fertility of ideas shown by the August Collections in Paris were eloquent of French courage in the face of impending war. Though fashions did not precisely ape the military, its impress was upon them, as shown by the prevalence of braid and white accessories, the importance of black and muted colors, and the complete "black-out" or "cover-up" of the hair and the figure until only hands and face were visible.

For the first time Pan-American Clippers flew dresses and hats from the Paris collections to America, a few hours after their showing. Barely were these August collections over when mobilization began. Some of the leading designers and their staffs left for war or for New York. English women went into uniform.

Unquestionably 1939 ushered in a new fashion cycle of premier importance to America for the year closed with New York the only functioning world-capital. As a result, social life became more cosmopolitan. Cafés presented a brilliant company which was more aristocratic than ever before. The city's importance as a luxury market increased. The best art exhibits, the leading painters and designers, and that chief source of creative fashion—the chic cosmopolitan woman—all important factors which make for creative fashion effort, came to this new center America now assumed new importance and promise in the fashion world.

CATHARINE OGLESBY

FBI. See FEDERAL BUREAU OF INVESTIGATION.

FCA. Farm Credit Administration (q.v.).

FCC. Federal Communications Commission (q.v.).

FEDERAL ALCOHOL ADMINISTRATION (FAA). Congress has vested in the

Federal Alcohol Administration the responsibility of regulating the business conduct of the alcoholic beverages industries, in the public interest. While the responsibility for controlling the liquor traffic rests primarily with the individual States, under the terms of the 21st Amendment to the Constitution, the Federal Government supplements the efforts of the States in the interstate field. All producers, importers, and wholesalers of alcoholic beverages, except brewers, are required to obtain basic permits from the Administration, conditioned upon compliance with all Federal laws relating to alcoholic beverages. By the end of 1939, Federal permits to the number of 15,416 were active.

In order to prevent the shipment in interstate commerce of misbranded products, standards of identity for which had already been set up by the Administration, all bottlers and importers of distilled spirits and wines, and to a limited extent bottlers of malt beverages, are required to obtain from the Administration certificates of label approval covering alcoholic beverages intended to be withdrawn from customs custody or bottled for interstate shipment. During the past year, 93,656 applications for label approval certificates and certificates of exemption from label approval were acted upon.

In the drafting of the advertising regulations and in their enforcement, the Administration has endeavored to meet the desire of Congress that current liquor advertising should be free from the objectionable features which characterized the advertising of the pre-prohibition period. The regulations are designed to require that all alcoholic beverages be sold as such, and that references to vitamin content, tonic properties, and medicinal virtues be omitted.

During the year, 67,182 newspaper and magazine advertisements have been checked, and 6,970 advertisements in the form of booklets, leaflets, posters, placards, statuettes, and novelties have been examined. The script for approximately 425 commercial radio broadcasts is reviewed each month.

The Federal Alcohol Administration, because of the inadequacy of existing laws, has been unable to prevent the bootlegging of taxpaid liquor across State lines. While Congress in 1936 passed a law "to enforce the 21st Amendment," this law operates to protect from bootleg shipments only the States of Oklahoma and Kansas. There is nothing at present in the law which prevents bootleggers residing in other States from going across State lines, purchasing liquor in large quantities from licensed distributors, and transporting it back into their own States for unlawful sale and use.

In order to conceal such transactions, in numerous instances the permittees falsified their records, and the Administration has succeeded in unearthing this practice and correcting it. During 1939, sixteen permits were suspended in cases which involved the movement of liquor across State lines for unlawful use, and one permit was revoked. In 23 other cases, permits were voluntarily surrendered either after investigation had begun or after proceedings had been instituted for violations of this nature.

The so-called Monopoly States have fared as badly as the Dry States from the bootlegging of taxpaid liquor, and the Administration has had many complaints from them and has succeeded in minimizing the evil, in one notable instance break-

ing up a large bootleg ring which was flooding the State of Ohio.

Violations of the fair trade provisions of the Act, particularly with respect to the furnishing of money, articles of value, and services to retailers, are prevalent. Of the 452 trade practice investigations conducted during 1939, 213 involved violations of this kind.

During the past year, the Administration has continued its activity, commenced July, 1937, looking to the voluntary removal of outside signs furnished to retail establishments by permittees, and has met with almost universal co-operation from the liquor industry in this program. To date, well over 10,000 such signs have been removed.

Five years' experience with the law has developed certain weaknesses which have been called to the attention of the Congress. If the authority asked for is granted, Federal control of the liquor traffic will be tighter and more efficient, a thing that the industry, as well as the public, much desires.

W. S. ALEXANDER.

FEDERAL BUREAU OF INVESTIGATION (FBI). The fiscal year 1939 witnessed a continued development of the co-operative and service features of the Federal Bureau of Investigation to American law enforcement. More demands have been made on the Bureau during this fiscal year than at any other period in the past 15 years.

The extensive and unparalleled judicial investigations presented investigative problems that were unique and possessed far-reaching ramifications. These investigations were of vital importance in order that the Federal judiciary might maintain the confidence of the nation which it has always enjoyed.

Even though the fiscal year showed a slight increase of crime over the preceding year, the condition of American law enforcement reached its highest level of proficiency in our national history. In the fiscal year 1939, the Federal Bureau of Investigation co-operated in the inauguration and operation of 183 police training schools in the United States, which for the greater part were under the supervision of graduates of the FBI National Police Academy.

The scientific aids to criminal investigations were further extended during the fiscal year with the application of technical knowledge to the practical application of crime detection. With the development and extension of police training, law enforcement officers in every section of the country have a keener appreciation of the scientific assistance which is available to them. The problems of the Technical Laboratory are different from those of any laboratory in the nation in that unusual items of physical evidence are constantly being received and each examination is different although the basic techniques may be similar. During the fiscal year over 5,559 examinations were conducted in the FBI Technical Laboratory, involving more than 39,000 specimens of evidence.

The Identification Division of the FBI completed its 15th fiscal year on June 30, 1939, by far exceeding the services rendered to American law enforcement in previous years. Created in 1924 with a nucleus of 810,188 fingerprint cards, its files at the close of the fiscal year included nearly 11,000,000 sets of fingerprints. In 1924 there were

987 contributing law enforcement agencies while in the fiscal year 1939 there were 10,528.

The investigative forces of the Federal Bureau of Investigation received many additional burdens during the past fiscal year. Work in espionage and related fields increased tremendously and during the past fiscal year it exceeded the volume of such cases handled during any previous year since the late World War. There were 37 convictions for violations of the Federal Kidnaping Law as a result of the work performed by the Bureau, with the imposition of sentences totaling 1 life, 254 years, 6 months, 1 day. During the past fiscal year numerous investigations were conducted under the Federal Bank Robbery Act. One hundred twenty-six convictions were secured resulting in the imposition of sentences totaling 5 life, 1933 years, 1 month, 5 days. The recovery of bank loot during the fiscal year totaled \$192,829. Fifty-one fugitive bank robbers were located during the year.

A great variety of special investigations were conducted including investigative inquiry in the State of Kansas into the question of oil rights of Indian Tribes and an extensive investigation of hot oil operations in the State of Texas, as well as numerous special antitrust investigations.

There were 5162 convictions secured during the fiscal year in cases handled by the FBI with impositions of sentences totaling 12 life, 16,948 years, 6 months, 5 days in actual, suspended and probationary sentences. In the past 15 years, a total of \$52,370,222 was appropriated for the operation of the FBI, while savings, fines and recoveries resulting from the investigative activities of the Federal Bureau of Investigation totaled \$251,855,353. Convictions were secured in 96 per cent of the cases investigated by the FBI during the fiscal year which were brought to trial.

One thousand eight hundred ninety Federal fugitives from justice were located by Special Agents and 7933 fugitives from justice were located by searching their fingerprints through the files of the Identification Division. See JUSTICE, U.S. DEPARTMENT OF.

J. EDGAR HOOVER.

FEDERAL CAPITAL TERRITORY.

See AUSTRALIAN CAPITAL TERRITORY.

FEDERAL COMMUNICATIONS COMMISSION. The fifth year of the Federal Communications Commission saw radio receiving increased attention as a result of neutrality problems invited by the European war and because of developments in television, facsimile, and the new frequency modulation system of broadcast.

During the year the Commission, as a result of public hearings, completely revised its rules and regulations governing all forms of radio service. A special committee recommended modification of regulations to encourage orderly development of television but with protection to the public from premature promotion. Another committee inquired into the policies and practices of "chain" broadcasting. And the study, instituted at the request of Congress, of standards to make more effective radio protection of life and property on our inland waterways, has been carried forward.

Of major interest in the telephone field was the Commission's recommendations, pursuant to Congressional order, for stricter regulation of the Bell System, an inquiry which brought about telephone rate reductions amounting to \$12,000,000 a year.

Commission records and personnel were utilized by a Senate committee in studying possible merger of existing rival telegraph facilities in the interests of economy and public service.

At the present time the Commission has about 65,000 outstanding radio licenses classified as follows: 800 standard broadcast, 600 broadcast other than standard, 400 experimental, 3800 ship, 1800 aviation, 1100 police, 250 forestry, 300 coastal, 800 fixed stations, and nearly 55,000 amateur.

During the year the Commission extended the broadcast license period from six months to one year. Procedure under which hearings are conducted were simplified, and processes leading to final decisions were expedited. In common carrier matters it has co-operated with State regulatory bodies and the National Association of Railroad and Utilities Commissioners. (Radio broadcasting is not common carrier under the Communications Act.)

The Commission now has 27 field offices located throughout the United States and its possessions, augmented by seven monitoring stations, which check all classes of radio apparatus, examine all types of radio operators, and investigate complaints. Under its statute, the Commission cannot censor radio programmes. No licenses of any sort are issued to aliens, and amateurs are not permitted to use secret telegraphic code.

The basic consideration in licensing broadcast stations is public service. As the Commission declared in a recent case: "Just as it may be a powerful instrumentality for public good, so a broadcast station has potentialities of causing great public harm, and it is accordingly imperative that the limited broadcast channels belonging to the public should be entrusted to those who have a sense of public responsibility."

During the year the Commission launched numerous engineering inquiries into techniques and refinements in various branches of communication. Included is an exhaustive study of the effect of sunspots on radio reception, means of reducing interference from electro-medical and like apparatus, better use of directional antennas, and new types of carrier telephone systems.

On Sept. 1, 1939, James Lawrence Fly was appointed Chairman of the Commission. Other members are Paul A. Walker, Norman S. Case, T. A. M. Craven, George Henry Payne, Frederick I. Thompson, and Thad H. Brown.

See COURTS, FEDERAL.

FEDERAL COUNCIL OF THE CHURCHES OF CHRIST IN AMERICA.

An organization established in 1908 by 28 Protestant denominations to act for them in matters of common interest. At the end of 1939 it included most of the major Protestant denominations of the United States.

The total number of communicant members included in the Council's constituency in 1939 was 22,188,422, counting only those 13 years of age and over.

Of the Council's eight departments, the following made a significant contribution during 1939. The department of social service conducted a series of conferences on preparation for marriage and family life; the department of evangelism directed the University Christian Mission in the interest of a spiritual awakening in educational institutions. The department of international justice and good will provided the American participation in an international conference at Geneva, Switzerland, on the relation of the churches to the political

crisis; it also carried on relief appeals in the churches for war sufferers in China and for German refugees. The radio department sponsored 10 religious programs on the air each week. The department of relations with churches abroad participated in the development of plans for a World Council of Churches. The department of research and education issued reports on "Trends in Anti-Semitism in the United States," "The Social Security Act in Relation to Church Employees," and "The Attitude of the Churches toward the War in Europe." A commission for the study of Christian unity presented a plan for the unification of American interdenominational agencies and began a study of unity in foreign missionary work. The *Federal Council Bulletin*, a monthly, continued to be issued as the official organ.

Officers during 1939 were: President, the Rev. George A. Buttrick; vice-president, Dr. John R. Mott; treasurer, Frank H. Mann; and general secretary, the Rev. Samuel McCrea Cavert. National offices are at 297 Fourth Avenue, New York City. An office is also maintained in the Woodward Building, Washington, D. C.

FEDERAL CROP INSURANCE CORPORATION (FCIC). The Federal Crop Insurance Corporation, established as an agency of and within the U.S. Department of Agriculture under the Federal Crop Insurance Act, which was Title V of the Agricultural Adjustment Act of 1938, as approved Feb. 16, 1938, was authorized to insure growing wheat against all unavoidable hazards commencing with the crop planted for harvest in 1939. Nearly 170,000 wheat growers in 31 States paid premiums for "all-risk" insurance on their 1939 crop; indemnities had been paid to more than 52,000 of these growers through Dec. 19, 1939, amounting to approximately 9,500,000 bu. of wheat. At the beginning of the calendar year 1940 some 310,000 premium payments had been received for insurance on wheat planted for harvest in 1940, practically all of which were from winter wheat growers. Spring wheat growers had until Feb. 29, 1940, to insure their 1940 harvest.

Crop insurance premiums and indemnities are computed entirely in terms of wheat, not dollars. For the sake of convenience, wheat growers may pay their premium with a warehouse receipt or cash equivalent representing the number of bushels as computed for the premium payment for the farm. Or the grower may charge the amount of the premium against future payments to be earned under the agricultural conservation program. Premiums paid in by growers are maintained by the Corporation in the form of actual wheat in storage. Indemnities are paid in wheat in the form of a warehouse receipt or in the cash equivalent thereof. The insured may indicate in his claim for indemnity whether he wishes the indemnity to be paid in wheat or in cash, but the Corporation reserves the right to make payment in a form other than that indicated by the insured.

Growers may insure 50 or 75 per cent of the past average yield for their farms. Premium rates and insurable yields are based on the actual or appraised loss and yield data for each individual farm over a uniformly established base period, adjusted to the average loss and yield data for the county in which the farm is located.

The crop insurance program is administered within States and counties by farmer committees, which permits direct contact with the wheat pro-

ducer. Because the program should contribute materially to the general welfare, the costs of administration, including costs of wheat-reserve storage and of research with a view to applying "all-risk" insurance to other crops, are paid from an annual Federal appropriation. For the crop year 1939 these costs amounted to \$4,800,000. The Corporation has an authorized capital stock of \$100,000,000 of which \$20,000,000 has been appropriated by the U.S. Government to operate as a revolving fund to meet losses in years of sub-normal wheat production when indemnities paid out may exceed premiums collected. It is expected that the amount drawn from its revolving fund during these sub-normal years will be recovered by the Corporation during years when production is above normal.

LEROY K. SMITH.

FEDERAL DEPOSIT INSURANCE CORPORATION (FDIC). See BANKS AND BANKING.

FEDERAL ELECTRIC ENTERPRISE. See UNITED STATES under *Departments and Agencies*.

FEDERAL EMERGENCY ADMINISTRATION OF PUBLIC WORKS. See PUBLIC WORKS ADMINISTRATION.

FEDERAL EXPENDITURES AND REVENUES. See PUBLIC FINANCE

FEDERAL FARM MORTGAGE CORPORATION. See FARM CREDIT ADMINISTRATION.

FEDERAL HOME LOAN BANK BOARD (FHLBB). The Federal Home Loan Bank Board administers the following three agencies: (1) The Federal Home Loan Bank System, (2) The Federal Savings and Loan Insurance Corporation, (3) The Home Owners' Loan Corporation. See BANKS AND BANKING; BUILDING.

Federal Home Loan Bank System, The, was created by an Act of Congress in 1932 and is composed of twelve regional banks constituting a central reserve credit system for their member institutions. While the major portion of the membership in the System consists of institutions of the savings and loan type, a number of insurance companies and mutual savings banks are also members.

The banks have obtained their funds, which may be advanced to member institutions on a long and short-term basis, from investments in their stock by their members and the United States Government, by deposits of member institutions, and through the sale of debentures. During the year ending Dec. 31, 1939, the paid-in stock of the Federal home loan banks increased from \$162,712,125 to \$165,718,950 this increase being entirely due to additional members' subscriptions since the United States Treasury made the final payment on the Government's subscription to stock of the banks in 1937. With the retirement on July 1, 1939, of debentures aggregating \$41,500,000 which matured on that date, the amount of debentures outstanding was reduced to \$48,500,000, of which \$25,000,000 mature on Dec. 1, 1940, and \$23,500,000 on Apr. 1, 1943. Members' deposits increased from \$21,900,109 at the beginning of the year to \$29,616,685 on Dec. 31, 1939.

The combined assets of members increased from approximately \$4,400,000,000 on Dec. 31, 1938, to \$4,700,000,000 on Dec. 31, 1939. Outstanding advances decreased during the same period

from \$198,842,438 to \$181,312,991. The total advances made from the beginning of operations to Dec. 31, 1939, aggregated \$581,922,460. The Federal Home Loan Bank Board is authorized by law to charter and supervise Federal savings and loan associations. During the year ending Dec. 31, 1939, the net addition to the number of Federals was 41. Among the members of the Bank System of the savings and loan type 794 are insured state-chartered institutions and 1678 are uninsured state-chartered institutions.

Federal Savings and Loan Insurance Corporation, The, established by the Congress in 1934 as an instrumentality of the United States, was, on Dec. 31, 1939, insuring the safety of investment to a maximum of \$5000 for each of 2,385,975 investors in 1397 Federal savings and loan associations, with assets of \$1,574,314,000, and in 799 state-chartered institutions with assets of \$932,644,000. Each insured institution pays an annual premium of one-eighth of 1 per cent of the total amount of all accounts of its insured members, plus its creditor obligations. On December 31 Corporation assets, consisting primarily of cash and obligations of, or guaranteed by, the United States, totaled \$121,981,942; reserves of \$20,695,366 had been added to the paid-in capital of \$100,000,000 which had been provided for by the Congress.

While the Corporation has authority to prevent the default of an insured institution and to restore an insured institution in default to normal operation by means of a loan or contribution to, or purchase of assets of the association in difficulty, the Corporation must in the event of default and liquidation of an insured institution promptly make available to each insured member thereof either (1) a new insured account in an insured institution not in default in an amount equal to the insured account so transferred, or (2) at the option of the insured member, his insured account as follows: Not to exceed 10 per cent in cash and 50 per cent of the remainder within one year, and the balance within three years from the date of such default. During 1939, 7 losses were settled bringing the total number since the start of the insurance program to 12.

Home Owners' Loan Corporation, The, is a Government agency, created by Congress in 1933 to cope with the crisis in the home-financing field by granting mortgage loans, during the period of the emergency, to distressed owners of non-farm homes. The HOLC has a capital stock of \$200,000,000, fully paid for by the Secretary of the Treasury. It also has authority to issue bonds in an aggregate amount not exceeding \$4,750,000,000. As of Dec. 31, 1939, excluding those bonds called for retirement, the HOLC had a total of \$2,751,000,000 in bonds outstanding, all guaranteed by the United States Government as to both principal and interest.

The Corporation's lending authority lasted three years, June 1933-June 1936. During this period, it loaned \$3,093,000,000 to 1,018,000 home owners. These loans were granted in amounts sufficient to refinance the original mortgage debt, pay taxes, and provide for reconditioning. In no case were they to exceed 80 per cent of the appraised value of the property, or \$14,000. Loans were made at a 5 per cent interest rate, and were repayable on an amortized basis over a period not exceeding 15 years, through regular monthly installments covering both principal and interest. In 1939, Congress authorized the HOLC to ex-

tend the period of repayment to a maximum of 25 years, where, in its judgment, the home owner's circumstances and the condition of the security justify such extension. Also, since Oct. 16, 1939, and until further notice, the HOLC, on payments becoming due on its loans from that date on, has been accepting interest at 4½ per cent, instead of the 5 per cent rate.

Since 1936, when its lending authority expired, the HOLC has been engaged in the collection of the funds it loaned. As of Dec. 31, 1939, foreclosures completed, and those under way, numbered 78,000. Over 63,000 loans had been paid in full. Of the remaining active original loans, 639,000, or 82.5 per cent, were being repaid satisfactorily. The other 17.5 per cent were in varying degrees of default, only a small portion, however, being in any imminent danger of foreclosure. In the handling of the properties it has been obliged to take over, the Corporation's essential interest is that of disposing of them through sale. Pending sale, these properties are rented. Through Dec. 31, 1939, the HOLC had acquired absolute title to 156,000 properties, or 15 per cent of the total number of loans originally granted. It had sold 80,000 of these properties, 46,000 of them having been disposed of during the year 1939. Of the 77,000 units in HOLC properties available for rental, 90.7 per cent were rented. See SUPREME COURT.

JOHN H. FAHEY.

FEDERAL HOUSING ADMINISTRATION (FHA). See BUILDING; HOUSING.

FEDERAL LAND BANKS. See FARM CREDIT ADMINISTRATION.

FEDERAL LOAN AGENCY. The Federal Loan Agency was created by the President's Reorganization Plan No. 1, of Apr. 25, 1939, pursuant to the Reorganization Act of 1939, which Act says that the President shall investigate the organization of all agencies of the Government and determine what changes are necessary to accomplish the following purposes: (1) to reduce expenditures; (2) to increase efficiency; (3) to group, co-ordinate, and consolidate agencies according to major purposes; (4) to reduce the number of agencies by consolidating those having similar functions and by abolishing such as may not be necessary; and (5) to eliminate overlapping and duplication of effort.

In order to carry out the purposes of the Reorganization Act of 1939, the President found it necessary and desirable, among other things, to group under the Federal Loan Agency the following agencies of the Government established from time to time for the purpose of stimulating and stabilizing the financial, commercial, and industrial enterprises of the Nation: Reconstruction Finance Corporation, Electric Home and Farm Authority, The RFC Mortgage Company, Disaster Loan Corporation, Federal National Mortgage Association, Federal Home Loan Bank Board, Home Owners' Loan Corporation, Federal Savings and Loan Insurance Corporation, Federal Housing Administration, and Export-Import Bank of Washington.

The head of the Federal Loan Agency is the Federal Loan Administrator. The Administrator, who is appointed by the President by and with the advice and consent of the Senate, supervises the administration, and is responsible for the co-ordination of the functions and activities, of the agencies named above.

See EXPORT-IMPORT BANK; FEDERAL HOME

LOAN BANK BOARD; HOUSING; RECONSTRUCTION FINANCE CORPORATION.

JESSE H. JONES.

FEDERAL MILK CONTROL. See DAIRY-ING.

FEDERAL MOTOR CARRIERS ACT. See AUTOMOBILES.

FEDERAL POWER COMMISSION. See ELECTRIC LIGHT AND POWER.

FEDERAL PRISON INDUSTRIES, INC. See PRISONS, PAROLE, AND CRIME CONTROL.

FEDERAL RESERVE BANKS. See BANKS AND BANKING.

FEDERAL SAVINGS AND LOAN INSURANCE CORPORATION. See FEDERAL HOME LOAN BANK BOARD.

FEDERAL SECURITY AGENCY. The Federal Security Agency was created on July 1, 1939, under the President's first reorganization plan. In the interests of efficiency and economy there were brought together five organizations concerned with the related problems of health, education, and social and economic security: the Social Security Board, the Public Health Service, the Office of Education, the National Youth Administration, and the Civilian Conservation Corps. Also the United States Employment Service and the Social Security Board's Bureau of Unemployment Compensation were consolidated to form a new Bureau of Employment Security.

The Public Health Service, oldest organization in the Federal Security Agency, had its inception in the Marine Hospital Service, established in 1798 for the care of American seamen. In 1912 Congress changed its name to the Public Health Service. The facilities of the Service have been increasingly employed to encourage the development of State and local health services. The Social Security Act, passed in 1935, provided grants of Federal funds to the States for this purpose. Another important activity of the Service is its scientific research work, the results of which are made available to both public and private organizations.

Three of the organizations are concerned with promoting educational opportunities. The Office of Education, an outgrowth of the National Department of Education established in 1867, serves as the clearing house for data on educational procedures and school administration and conducts research on educational problems.

It also administers the programs for vocational education and vocational rehabilitation, which provide Federal grants to States for vocational education in schools and vocational training of persons who are disabled.

The Civilian Conservation Corps was established in 1933 to provide useful employment and training for young men, who because of economic conditions are unable to find work or continue their schooling.

In 1935, the National Youth Administration was established to provide work experience and training for young people between the ages of 16 and 25 no longer attending school full time and not regularly employed. Later it was given administrative responsibility for student-aid projects, under which needy young people are given financial assistance to enable them to continue their schooling in exchange for part-time work.

The Social Security Board, also established in 1935, is the largest organization in the Federal Security Agency. It administers the provisions

of the Social Security Act dealing with old-age and survivors insurance, employment security, and public assistance. The first two of these programs are social insurance systems for wage earners; the benefits payable under them are based on the wage earner's own work and earnings and are paid as a right regardless of what other resources he may have. Public assistance provides cash allowances for three groups of the needy unable to support themselves: the aged, the blind, and dependent children.

Together the programs administered under the Federal Security Agency represent a comprehensive group of services to meet Nation-wide needs. Through them the Federal Government is meeting its obligation to safeguard the general welfare of all the people. See CIVILIAN CONSERVATION CORPS; EDUCATION; EDUCATION, OFFICE OF; EMPLOYMENT SERVICE, U.S.; NATIONAL YOUTH ADMINISTRATION; PUBLIC HEALTH SERVICE; SOCIAL SECURITY BOARD.

PAUL V. McNUTT.

FEDERAL SURPLUS COMMODITIES CORPORATION (FSCC). Inauguration of the surplus food order stamp plan and expansion of the free school lunch program were significant developments during 1939 in Federal Surplus Commodities Corporation activities, which are designed to broaden market outlets for farmers and to encourage increased consumption of agricultural surpluses.

A program under which agricultural surpluses are purchased by the Corporation and distributed to the needy and unemployed through State welfare agencies, has been carried out since 1935 as the principal method of reaching these objectives. The stamp plan grew out of the search for still more effective ways of expanding the domestic market for agricultural producers, and at the same time combating malnutrition among millions of the country's consumers. Under the stamp plan program, which operates in designated cities and areas, increased buying power is given to eligible low-income families for use in purchasing, through normal channels of trade, commodities officially listed as being "in surplus."

The stamp plan works as follows: Studies indicate that persons getting public assistance spend an average of about one dollar a week per person for food. On a voluntary basis such persons may buy a minimum of one dollar's worth of orange stamps a week for each member of the family. These are good for any food at any grocery store. Persons buying orange stamps receive half again as many blue stamps free. The blue stamps take the place of the commodities they formerly got at food depots and are good at any grocery store for foods found to be "in surplus" by the Secretary of Agriculture. (The foods "in surplus" are chiefly dairy and poultry products, fruits, and vegetables; meats could easily be handled by this method if it became necessary.) Grocers paste the stamps, each worth twenty-five cents, on five-dollar cards and redeem them largely through their banks. The Government pays the banks for both orange and blue stamps, the blue ones being redeemed from the same funds used to purchase surplus commodities directly. Persons receiving public aid can thus get surplus foods at the corner grocery store, and they will have seven and one-half cents instead of five to spend for each meal.

The stamp plan program was inaugurated in Rochester, N. Y., in May, 1939. After experimen-

tal operation in this and five other cities, results were encouraging enough to warrant gradual expansion to other areas throughout the country. By the end of December, 1939, 35 areas had been designated for stamp plan operation, and plans had been made for extension of the program to possibly 100 additional areas by July 1, 1940.

During the fiscal year ending June 30, 1939, more than 1,900,000,000 pounds of surplus farm commodities, including a wide range of dairy products, fruits, and vegetables, were bought by the Corporation and donated to State welfare agencies for distribution to the needy. These commodities cost approximately \$66,500,000 and were distributed to more than 10,500,000 persons.

The free school lunch program developed into an outstanding feature of the direct purchase and distribution operations. Of the total quantity of surplus products made available to the States during the 1938-39 year, about 29,000,000 lb. were supplied to co-operating agencies for use in free school lunches. At the peak of distribution in the spring of 1939, the school lunches were being served to nearly 900,000 children in 14,000 schools. Further expansion of this program was begun with the opening of the new school year in the fall of 1939.

In addition to the programs for encouraging domestic consumption of farm surpluses, the Corporation operated a program to assist American wheat farmers in maintaining their fair share of the world wheat market. This program was operated in conjunction with a flour export program. Together, the programs assisted in moving 94,000,000 bu. of the 118,000,000 bu. of wheat and wheat in the form of flour which were sold for export during the 1938-39 fiscal year.

The Federal Surplus Commodities Corporation is an agency of the United States Department of Agriculture. It is a non-profit, membership corporation without capital stock, and was organized Oct. 4, 1933, under the laws of Delaware as the Federal Surplus Relief Corporation. The change to its present name was made Nov. 18, 1935. Funds derived from a sum equivalent to 30 per cent of the gross customs receipts of the previous year, as designated by Section 32, Public No. 320, approved Aug. 24, 1935, and additional funds appropriated by Congress, are provided to carry on the various activities of the Corporation.

MILO PERKINS.

FEDERAL TAXATION. See TAXATION.

FEDERAL THEATER PROJECT. See RELIEF.

FEDERAL TRADE COMMISSION (FTC). The Federal Trade Commission is an agency of the Federal Government, created by Congress in 1914 upon the recommendation of President Woodrow Wilson as an expert body in the field of business practices, to prevent those methods of competition which are harmful to the public and to industry. It administers the provisions of the Federal Trade Commission Act, the Export Trade Act, and certain sections of the Clayton Act, and is composed of five commissioners appointed by the President for terms of seven years. The Commission is bi-partisan, since no more than three of its members may be affiliated with any one political party; and is an independent agency, in that it is not supervised or controlled by any other department of the government.

While its duties also include prevention of such price discriminations, stock acquisitions of competitors and exclusive dealing contracts as are unlawful, the bulk of the Commission's work is carried on pursuant to Section 5 of the Federal Trade Commission Act, which declares "unfair methods of competition in commerce" and "unfair or deceptive acts or practices in commerce" to be unlawful, and sets up administrative machinery (resembling somewhat that of the equity courts) by which the Commission is directed to prevent continued use of such unlawful conduct by means of orders to cease and desist. The Wheeler-Lea Act of March, 1938, the first direct amendment to the original law of 1914, vested the Commission with special powers to prevent dissemination of false advertising of food, drugs, curative devices, and cosmetics, and made certain other changes largely of a procedural nature.

Congress framed the legal test of business practices in broad outline, and did not attempt in Section 5 to enumerate specific practices declared unlawful. The Commission has held many different practices to be unfair and unlawful under this section, including combination to restrain commerce by way of fixing prices, or by boycott; misrepresentations by sellers of the nature of their goods; false advertising of various sorts; disparagement of competitors; commercial bribery; lottery merchandising schemes; short-filling of containers; fictitious price marking; use of misleading trade names; simulation of a competitor's goods or trade-mark; etc.

Commission orders are not aimed to settle private controversies between competitors, but rather to protect the larger interests of the public and honest business from the activities of the unscrupulous.

In addition to the formal procedure, an important method of prevention is found in trade practice conferences sponsored by the Commission for the purpose of promulgating rules, by which entire industries may simultaneously abandon unfair or deceptive practices, and elevate their standards of business conduct on a voluntary and co-operative basis.

Under Section 6, the Commission conducts general investigations upon request of Congress, the President, or the Attorney General, and it has reported upon almost every industry of any importance. Commission investigations such as those into the meat-packing industry, the grain trade, electric and gas utilities, and chain stores have contributed to enactment of both state and federal legislation of large benefit to the public.

R. E. FREER.

FEDERAL WORKS AGENCY. Created July 1, 1939, under Reorganization Plan Number 1, the Federal Works Agency has under its general supervision most of the major construction activities of the Federal Government. The Federal Works Agency is under the direction of Administrator John M. Carmody.

The Federal agencies grouped under the new Federal Works Agency include the Work Projects Administration, the Public Works Administration, the Public Roads Administration, the United States Housing Authority, and the Public Buildings Administration. Each of these constituent agencies is headed by a Commissioner, with the exception of the United States Housing Authority, which is under an Administrator. They are all under the direction and supervision of the

Federal Works Administrator. This group of agencies are concerned with public works, with grants and loans to state and local governments, and with construction practices and standards.

For the fiscal year ending June 30, 1940, the Work Projects Administration (q.v.) has an appropriation of \$1,477,000,000 to provide work for needy persons on useful public projects. It has been estimated that this will provide an average monthly employment of approximately 2,000,000 persons.

The Public Works Administration (q.v.) in the fall of 1939 passed the peak of its construction programme. Unless Congress makes appropriations for further programmes of loans and grants to state and local governments for useful public works, the Public Works Administration will be gradually liquidated as the various construction projects which it has helped to finance are completed.

The Public Roads Administration carries forward a number of road programmes. A large portion of the work is done co-operatively with the State Highway Departments. These programmes include a Federal-aid highways system for which \$115,000,000 is authorized for the fiscal year ending June 30, 1941; secondary or farm-to-market roads, for which \$15,000,000 is authorized, and the elimination of hazards at grade crossings, for which \$30,000,000 is authorized.

The major purpose of the United States Housing Authority is to assist local public housing authorities to remedy unsafe and insanitary housing conditions. It administers grants-in-aid and loans to these local authorities for slum clearance and for the construction of low-rent housing. This is a portion of the housing field which private enterprise has been unable to reach with a profit. An \$800,000,000 programme is under way.

The Public Buildings Administration is responsible for the construction, repair, and maintenance of most Federal buildings, both inside and outside of the District of Columbia. Among the large Federal structures whose construction is being undertaken are the new Social Security Building and the new building for the War Department. See SCULPTURE.

The Federal Works Agency, by co-ordinating the activities of these five agencies is eliminating overlapping, reducing administrative costs, and improving the efficiency of their construction programs. These programmes provide needed employment on useful public works and by expenditures for materials and wages help to sustain industry and commerce. See UNITED STATES under *Administration*.

JOHN M. CARMODY.

FEDERATED MALAY STATES. The four British-controlled States (Negri Sembilan, Pahang, Perak, Selangor) of the Malay Peninsula. Their areas and populations are given in the accompanying table.

State	Sq. mi.	Pop (1938)	Capital
Negri Sembilan	2,580	281,089	Seremban
Pahang	13,820	209,317	Pekan
Perak	7,980	938,421	Taiping
Selangor	3,160	661,008	Kuala Lumpur
Federated Malay States	27,540	2,089,835	Kuala Lumpur

Chief towns (with 1937 populations): Kuala Lumpur, the capital (136,068), Ipoh (64,343),

Taiping (38,083), Seremban (27,363), and Klang (27,030). During 1937 there were 74,196 births (37.8 per 1000) and 39,031 deaths (19.9 per 1000). The 1477 schools (English, Malay, Chinese, and Tamil) had 125,615 students enrolled (1937); in addition, there were technical and trade schools maintained by the government.

Production and Trade. The main industries consist of agriculture and mining. Rubber, coconuts, rice, oil palms, tapioca, coffee, pineapples, areca nuts, tobacco, timber, gold, tungsten, ilmenite, and coal are the principal products. The forests produce, in addition to fine timbers, gutta percha, gums, oils, resins, and canes. Livestock (1937): 61,859 oxen, 57,502 buffaloes, 122,738 goats, 10,000 sheep, and 251 horses. In 1937, imports were valued at S\$131,101,350 (the chief items were rice, gasoline, cotton yarns and manufactures, and machinery); exports, including re-exports totaled S\$357,247,152 (rubber S\$171,258,400, tin and tin ore S\$151,418,742, copra S\$9,530,347). The Straits dollar (\$) averaged \$0.5797 in 1937; \$0.5692 in 1938; \$0.5174 in 1939.

Communications. In 1938 there were miles of paved roads, 1525 miles of bridge paths, and 1068 miles of meter-gauge railways owned or leased by the government. Shipping aggregating 7,231,567 tons (excluding steamers of 75 tons net register and under, and native craft), entered and cleared Port Swettenham.

Government. Budget estimates (1939): revenue, S\$60,322,098; expenditure, S\$74,019,647. The resolution, introduced by the rulers of the four States, to offer a contribution of S\$4,000,000 to the cost of Imperial defence was unanimously approved by the Federal council on May 18, 1939. The Federated Malay States, which are under the protection of Great Britain, are governed in matters common to them all by a Federal council comprising the Governor of the Straits Settlements (who is ex officio high commissioner) as president, 15 government officials, and 12 unofficial members nominated by the high commissioner. Each of the four States has a native ruler who is subject to the advice of a British Resident. State councils may legislate in purely local matters. High Commissioner, the Governor of the Straits Settlements—Sir Shenton Thomas (appointed, 1934).

History. The crowning of the new Sultan, Sir Hisamud-din Alam Shah, took place at Klang toward the end of January of 1939. After being washed with holy water and rice paste and anointed, the Sultan and Sultana entered the throne-room of the palace to be crowned by the Sultan's elder brother who was formerly a claimant to the throne. The installation of Sir Abdul Aziz as 31st Sultan of Perak took place at Kuala Kangsar on Mar. 3, 1939.

FENCING. See SPORTS.

FERNANDO PO. See SPANISH WEST AFRICA.

FERTILIZERS. Among especially noteworthy developments with regard to fertilizers in 1939 were increase of knowledge of the actual and potential supplies of raw materials, especially phosphates, and synthetic products available for fertilizer use in the United States; improvement of the quality of manufactured fertilizers; more efficient use of fertilizers for special purposes; and possible effect of disturbed world conditions on the fertilizer trade.

Recent inquiries have shown that the United States is even more abundantly supplied with phosphates than previous estimates had indicated

and, if necessary, could become self-sustaining with regard to potash and nitrogen.

The very earnest effort of agronomists and manufacturers to improve the quality of mixed fertilizers remained unabated. The effect of this effort is strikingly shown in the fact that whereas in 1928 7,985,000 tons of fertilizers containing 1,357,000 tons of plant food were used in the United States at a cost of \$275,000,000, in 1938 7,504,000 tons containing 1,380,000 tons of plant food were used at a cost of \$192,000,000. A recent study of fertilizer prices in this country shows that they are now about one-fourth lower than they were in 1929, as measured by actual plant food content.

The possible effect of the present war conditions on the fertilizer trade is not now clearly apparent. So far it has not been very marked, although exports of phosphates to Germany, which is the largest customer of the United States for this product, are reported to have already been disturbed by the British blockade.

The Bureau of Foreign and Domestic Commerce of the U.S. Department of Commerce states that the imports of fertilizer materials have been steadily declining during the past 10 years. Receipts of chemical nitrogen products fell from 1,314,396 long tons in 1928 to 914,511 tons in 1938, of natural organics from 305,152 to 139,206, chemical phosphates from 50,388 to 29,835, chemical potash from 841,550 to 326,730, while the total of the group for ammonium phosphate, potassium nitrate, and compound and mixed fertilizers rose from 19,061 to 122,900 tons.

Phosphates. Hearings were held by the Congressional Committee on phosphate reserves¹ at Washington and in the various phosphate-bearing areas of the country in 1939. Pursuant to the joint resolution of Congress, the committee undertook to study "(1) the use and service of phosphate to American agriculture; (2) the domestic consumption and exports of phosphate; (3) the adequacy of the supply of phosphate to the United States; (4) the development of phosphate deposits in the Western States; and (5) methods of conserving phosphate resources of the United States." The findings of the committee and the testimony of experts indicated a reserve of some 3,000,000,000 tons of high-grade rock in Florida and perhaps 20,000,000,000 tons of lower grade phosphate which might be added to the available reserve. The Tennessee area appears to have at least 200,000,000 tons of high-grade rock in reserve with an undetermined but very large supply of low-grade rock and phosphatic limestone that might be utilized with modern methods of recovery. Apparently the previously estimated western reserve of 6,500,000,000 tons may be multiplied by three. It has been estimated that the United States has a sufficient supply of phosphate to last for at least 3000 years at the present rate of consumption. However, the Secretary of Agriculture calls attention to the significant fact that "we lose each year in the United States about 2,000,000 tons of the element phosphorus in the crops as they are taken off the soil, and another 2,000,000 tons in the soil that is carried off by erosion, a total loss of 4,000,000 tons of phosphorus. Our supplies are very great, but our loss is also very great, and now that we are maturing

as a nation it is undoubtedly high time that we approach the subject carefully and thoughtfully."

Under the Domestic Allotment Act, the Agricultural Adjustment Administration is authorized to supply superphosphates to farmers as grants in aid. Something over 65,000 tons of superphosphate was so distributed in 1938. It is estimated that 135,000 tons was required for the purpose in 1939 (45,000 tons furnished by the TVA and 90,000 tons by commercial manufacturers).

Further progress was reported by the TVA and the U.S. Department of Agriculture in manufacture and use of concentrated phosphate (especially triple superphosphates).

An effective means of removing fluorine from natural phosphates in which it is always present, impairing their value for the manufacture of superphosphate, has been found in heating the raw rock phosphate to 50° to 170° C. above the melting point in contact with water vapor. This may materially increase the supply of rock phosphate suitable for superphosphate manufacture.

Potash. The potential and actual development of the potash resources of the United States is such that in case of necessity the country may be capable of becoming independent of foreign sources of supply for agriculture. The country now obtains approximately one-third of its supply from foreign sources and two-thirds from domestic sources, which are being steadily developed. It is estimated that operations recently undertaken in California and New Mexico, supplementing the present domestic output, would produce potash sufficient for all domestic needs.

A joint committee of the Association of Land-Grant Colleges and Universities and the U.S. Department of Agriculture reported in some detail during the year on the amount, character, conservation, and proper use of the potash resources of the United States. The findings of the committee indicate that the production of potash in the United States in 1938 was 316,951 short tons of K₂O, imports 180,795, exports 52,052, and apparent consumption 445,694 short tons. Of the total amount all except 5 to 10 per cent was used for agricultural purposes. The report says that "much information is already at hand to show that potassic fertilizers exert a favorable influence on yield and quality, and increase resistance to disease, drought, and frost. Potassium improves the shape, size, color, flavor, storage, and shipping qualities of fruits, tubers, and vegetables, thus increasing their marketability as foods and feeds or as industrial raw materials for the production of clothing, foodstuffs, and beverages," but "much more detailed experimentation is required before the action of potassium can be fully understood and its agricultural use made rational and adapted to the needs of the various soil types and crops."

Potash fertilizers have recently been shown to be effective in preventing or reducing the severity of rice rot and cotton wilt and rust.

Nitrogen. With the progress in fixation of nitrogen of the air in forms suitable for agriculture, it would seem that the United States could in case of necessity dispense with foreign sources of supply.

It is estimated that approximately 14 per cent of the nitrogen used in fertilizers is derived from synthetic ammonia, which furnishes a cheap source of nitrogen and is capable of being rapidly and indefinitely increased to meet emergency demands, particularly in view of the fact that there

¹ U.S. Congress, 75th, 3d sess., Hearings, June 18-Nov. 29, 1938, Pub. Res. 112. Phosphate Resources of the United States. 1939.

are 20,000,000 tons of nitrogen over every square mile of the earth's surface.

Further investigations have confirmed previous conclusions as to the high value of synthetic urea as a source of nitrogen, especially for use in mixed fertilizers. (See also BIOLOGICAL CHEMISTRY.)

Larger quantities of byproduct sulphate of ammonia may be expected to be available with the speeding up of steel production for war purposes, and consequent increased use of blast-furnace coke.

The large amount of experimental data relating to relative efficiency of different forms of nitrogen in fertilizers has recently been summarized as follows: "Water-insoluble organic sources of nitrogen are not readily leached and do not materially increase soil acidity. They have, however, a low total availability as compared to water-soluble forms of nitrogen. This property cannot be corrected by any known means. Nitrate nitrogen is completely available and in the form of calcium and sodium nitrate tends to reduce rather than increase soil acidity. On the other hand, it is very readily leached from the soil. This property of nitrate nitrogen cannot be changed. Leaching losses may be reduced by making two or more applications of fertilizer during the growing season. Ammonium nitrogen is completely available to plants and is not easily leached from the soil. Its one weakness is that, particularly in the form of ammonium salts, it materially increases soil acidity. This acidifying action, however, is easily corrected by the use of limestone. When limestone is used with ammonium nitrogen it is, in most cases, one of the best sources of nitrogen that can be used in fertilizers that are to be applied at planting. Soluble organic nitrogen, urea and the soluble portion of natural organics, is completely available to plants, is resistant to leaching and only slightly increases soil acidity. This form of nitrogen is one of the best that can be used in complete fertilizers. The efficiency of soluble organic nitrogen, however, is frequently increased by the use of small supplements of limestone, preferably dolomite. The cost of nitrogen in complete fertilizer could be reduced approximately one-third by substituting soluble but leaching resistant forms of nitrogen for water-insoluble organic sources."

Applying fertilizers in solution. Applying fertilizers in irrigation water has been found by the California Experiment Station to be a very effective means of utilizing manure leachings and commercial fertilizers in crop production. The New York State Experiment Station has shown that the yield of tomatoes may be greatly increased by dissolving chemical fertilizers, especially soluble phosphates, in water and applying the solution at the time of transplanting, as a starter or supplement to the regular fertilizer treatment. Fertilizers so applied increased the yield of early tomatoes 1.44 tons per acre at a cost of only 48 cents. The widespread interest in hydroponics or so-called soil-less agriculture has probably had something to do with this development.

Activated sludge. An activated sludge of the Milwaukee Sewage Disposal Plant is proving to be an excellent fertilizer, thus offering a useful way of disposing of a product which is a serious problem in sewage disposal.

Fertilizers and quality of crops. Comprehensive and detailed studies of the effect of manure and fertilizers on the quality as well as

the yield of crops are in progress in this and other countries. The results have pointed the way to increased economy and efficiency of fertilizers and improved quality of the crops grown. Judicious use of fertilizers on thin pasture land has been demonstrated to be an effective and profitable means of increasing the returns from such lands.

Fertilizer placement. The most effective placement of fertilizers in the soil continues to receive much attention, especially by vegetable growers, with material saving in cost and increased efficiency. This is of special importance because vegetable growers are heavy users of fertilizers and are dependent upon them to a very great extent for improving both yield and quality.

Mushroom compost. Further investigations by the Pennsylvania Experiment Station on preparation of artificial compost for mushroom culture has shown that the materials for such compost must furnish assimilable carbon compounds as well as mineral plant food and must be free from foreign fungi and bacteria. Clean wheat straw and urea have given good results in such composts.

Fertilizers in fish culture. The use of fertilizers in fish culture seems likely to become of practical importance in this country as it has long been in Germany and other European countries. The Alabama Experiment Station has found that unfertilized fish ponds produce from 100 to 200 pounds of fish per acre, while properly fertilized ponds produce as high as 580 pounds per acre. The most profitable mixture has been found to be 5 pounds of muriate of potash, 40 pounds of sulphate of ammonia, 60 pounds of superphosphate, and 30 pounds of basic slag or 15 pounds of ground limestone per acre of water. The same results were obtained whether the fertilizers were applied separately or in mixture. The fertilizers feed small plants, some microscopic, which in turn furnish food for the fish.

See CHEMISTRY, INDUSTRIAL; SOILS; TENNESSEE VALLEY AUTHORITY.

WALTER H. BEAL

FIBER GLASS. See GLASS.

FIJI (fé'jē) ISLANDS. A British colony in the South Pacific, consisting of some 250 islands (80 inhabited) and its dependency—the islands of Rotuma. The largest islands are Viti Levu (4053 sq. mi.), Vanua Levu (2128 sq. mi.), Taveuni (166 sq. mi.), and Kandavu (165 sq. mi.). Total area, including the islands of Rotuma, 7083 square miles; total population (Jan. 1, 1938, estimate), 205,397 (including 99,595 Fijians, 89,333 East Indians, and 4238 Europeans), as compared with 198,379 (1936 census). Chief towns: Suva (capital, on Viti Levu), 15,522 inhabitants; Levuka (on Ovalau).

Production and Trade. The principal products are sugar, copra, molasses, bananas, trocas shell, butter, pineapples, native foodstuffs, and gold. Various timbers are produced from the forests which have a total area of 3696 square miles. Livestock (1937): 70,000 cattle; 20,000 goats; 15,000 horses, asses, and mules; 3000 swine; and 600 sheep. Chief exports (1938): sugar, 134,415 tons valued at £1,338,183; gold, 89,354 oz., £701,272; copra, 33,475 tons, £270,915; and bananas, 16,135 bunches and 149,395 cases, £73,578. In 1938, imports were valued at £1,675,437; exports, £2,535,029. During 1937 some 153 vessels aggregating 944,452 tons entered the ports. There were (in 1938) 2228 miles of roads, and a small gauge

railway of 120 miles from Tavua to Sigatoka.

Government. For 1938 revenue totaled £831,594; expenditure, £782,374; public debt, £1,414,030. The government is administered by a governor (appointed by the Crown) assisted by an executive council of 7 members, and a legislative council (of which the governor is president) of 31 members (16 official, 5 European, 5 native, and 5 Indian). Native administration is carried on through the chiefs subject to the governor's supervision. Governor of Fiji and High Commissioner for the Western Pacific, Sir Harry Luke (appointed June 26, 1938).

History. It was announced during March of 1939 that certain social and economic reforms would be instituted in the islands. Sir Frank Stockdale, chief agricultural adviser to the British Colonial Office, who headed an investigation to Fiji in 1937, recommended, among other things, that the question of sugar-land tenure be given early consideration; that methods of sugar-cane cultivation be improved; that the workers be provided with better housing; and that a credit system be put into effect in order to eliminate moneylenders who prey on the sugar planters. A new government building, which contains a legislative chamber and two law courts in addition to housing various departments of the government, was opened by Sir Harry Luke, the governor, on May 12, 1939.

FILMS. See MOTION PICTURES; PHOTOGRAPHY.

FINANCE. See BANKS AND BANKING; FINANCIAL REVIEW; INTERNATIONAL BANKING AND FINANCE; PUBLIC FINANCE; MONEY, U.S. STOCK OF; REPARATIONS AND WAR DEBTS; UNITED STATES under *Administration*; and sections under *Finance* in various countries.

FINANCIAL REVIEW. The financial markets in 1939 were called upon to withstand the shock of the outbreak of another major European war. A severe reaction had occurred in the markets during September, 1938, at the time of the pre-Munich crisis. Again, stock quotations declined sharply early in the spring of 1939 when Germany established her protectorate over Bohemia and Moravia. The upturn in business activity during the summer of the year brought a rising trend in the security markets, but it was widely assumed that a declaration of war among the major European powers would again precipitate a great wave of liquidation. While the markets did decline rather rapidly during the week immediately preceding the outbreak of war, the beginning of the German invasion of Poland brought a sharp rally, however, and security quotations rose briskly during the first two weeks of September, numerous issues rising to new high prices for the year or longer.

Several reasons explain the fact that the outbreak of a European war failed to disorganize the financial machinery of the United States in 1939, whereas the beginning of the World War 25 years before forced the closing of the New York Stock Exchange for a period of four and a half months. In the first place, European holdings of American securities in 1939, while substantial, represented a far smaller proportion of the total outstanding than was the case in 1914. The larger part of the foreign capital that flowed into the United States since 1934 has been held here in the form of bank balances, rather than stocks and bonds, and the possible withdrawal of such funds would thus not make necessary the liquidation of securities. Furthermore, the larger part of European holdings of

American securities were owned in neutral countries, so that immediate liquidation was not feared. In the second place, whereas wholesale liquidation by individual investors abroad was feared in 1914, Great Britain and France in 1939 immediately on the declaration of war required the registration of holdings of American securities by their nationals, so that they could halt liquidation and nationalize them if events should prove this necessary to avoid their sale at relatively low prices. A third important factor explaining why the financial markets did not decline because of the outbreak of war in Europe was the sharp upturn in business and commodity prices that resulted from the wave of forward buying that occurred immediately after the outbreak of the war. Whereas, in 1914, business activity and the price level declined for some months after the war began, the reverse occurred this time. Finally, knowing that the World War witnessed an inflationary rise in business profits and a spectacular advance in stock prices, investors and speculators were inclined to expect a repetition on the present occasion.

While the Securities and Exchange Commission watched the markets carefully, and was ready to order the closing of the New York Stock Exchange if trading became disorganized, it was very content to pursue a hands-off policy when it found that action was not needed.

Security Markets. Stock prices fluctuated irregularly during the early months of 1939, when business activity was declining gradually, but a renewed upturn in the latter part of the year was widely expected. The German march into Prague brought a severe decline, however, and the *New York Times* average of quotations of 50 stocks declined from a high of 107.51 in March to a low of 84.79 in April. Thereafter, as business turned upward from the low level of the spring, the security markets rallied, although they remained vulnerable to liquidation whenever the news from Europe pointed to a new political crisis. The spurt in the market which accompanied and followed the declaration of war carried the *New York Times* average to 114.27 on September 13, which was the high for the year. It will be noted, however, that this was only slightly higher than the peak reached by the average in January and March. Thereafter, although business continued to rise briskly, and the Federal Reserve Board's adjusted index of industrial production reached an all-time peak of 128 in December, stock prices reacted and the market fluctuated irregularly during the remainder of the year moderately below the high point of the September upturn. The failure of the stock market to continue to advance in the face of extremely favorable business news and corporate earnings prospects was due primarily to the growing conviction that the high level of industrial activity, which reflected in part inventory accumulation, could not last long, and investors were inclined to discount at least a moderate decline in business in planning their commitments. Contributing factors tending to restrain the stock market were liquidation from Great Britain, where holders could sell their American securities with the approval of the financial authorities, and selling to realize tax losses in many issues in the closing weeks of the year.

High and low figures for the *New York Times* average for each month of the year are shown in the table on p. 270.

The outbreak of a major war brought spectacular advances in issues of companies producing war

NEW YORK TIMES STOCK MARKET AVERAGE
FOR 1939

[50 Stocks—25 Rails and 25 Industrials]

Month	High	Low	Last
January.....	109.04	96.06	100.74
February.....	104.12	99.52	103.51
March.....	107.51	92.09	92.44
April.....	94.96	84.79	91.62
May.....	98.35	90.63	97.70
June.....	99.75	92.25	93.32
July.....	103.84	93.54	101.87
August.....	104.43	93.11	96.45
September.....	114.27	92.67	112.73
October.....	113.15	108.33	110.51
November.....	110.86	105.86	106.34
December.....	110.35	106.25	110.00

supplies and materials, such as aircraft manufacturers, some steel manufacturing companies, etc. At the same time, very sharp increases occurred in quotations of stocks of companies producing raw materials whose prices rose sharply because of the war, such as sugar and some mining companies. However, the upturn in business was so broad and vigorous that the rise quickly embraced other groups. Furthermore, the reaction that occurred in prices of many commodities, particularly sugar, caused severe subsequent reactions in quotations of many such stock issues. The Neutrality Act debate affected the market for aircraft and shipping stocks for a time, but both these groups were more successful in retaining their initial advances to the end of the year than most others.

The high, low, and closing prices of the most active stocks listed on the New York Stock Exchange, for 1939, were as follows:

PRICES OF THE MOST ACTIVE STOCKS

Stock	High	Low	Close
U.S. Steel.....	82½ Sept 12	41½ Aug 24	66½
General Motors..	56½ Oct. 26	36½ April 11	54½
Loft.....	21½ July 22	6 March 31	18½
Curtiss-Wright...	13½ Nov. 4	4½ Aug. 24	10½
N.Y. Central....	23½ Sept 27	11½ Sept. 1	18½
Chrysler.....	94½ Oct. 6	53½ April 11	89½
U.S. Rubber.....	52½ Jan. 3	31½ April 11	40½
Republic Steel...	28½ Sept. 12	12½ April 10	22½
Bethlehem Steel..	100 Sept. 11	50½ June 30	80½
Anaconda.....	40 Sept. 5	20½ April 11	29½
North American			
Aviation.....	29½ Nov. 4	12½ April 11	25½
General Electric.	44½ Jan. 15	31 April 11	40½

Sales on the New York Stock Exchange for 1939 aggregated 262,029,599 shares, as compared with 297,466,722 shares in 1938. Sales of bonds on the Exchange totaled \$2,046,083,000, which compared with \$1,859,865,000 in 1938. The total value of all listed stocks on December 31, 1939 was \$46,467,616,000, as against \$47,490,794,000 a year before.

High grade bond prices were strong during the first eight months of the year, reflecting the persistent demand from banks and insurance companies which had large surpluses of funds for investment. A sharp reaction occurred in September, owing to the fear that the war might cause a rise in interest rates, but on more sober reflection it was generally recognized that, with the gold inflow continuing and with this country remaining at peace, the chief influence in the bond market would continue to be the large surplus of funds available for investment. Therefore, gilt edge bonds generally were close to the high prices of the year at its close. Middle grade and speculative bonds participated in the broad advance on the stock market during September, and in many instances ended the year with gains.

The course of corporate bond prices, as measured by indices of the Standard Statistics Company, was as follows:

AVERAGES OF BOND PRICES

	Total	Corporate	Industrial	Railroad	Utility
Number of issues..	60	20	20	20	
1939—January....	81.9	86.2	59.7	99.7	
February.....	82.1	86.4	59.0	100.7	
March.....	83.1	87.1	60.9	101.3	
April.....	79.4	83.8	54.5	99.7	
May.....	80.2	84.8	54.8	101.0	
June.....	81.4	86.2	56.2	101.6	
July.....	81.6	86.3	56.4	102.1	
August.....	81.0	85.8	55.5	101.7	
September.....	80.9	85.0	59.0	98.6	
October.....	82.9	86.4	61.6	100.5	
November.....	83.0	87.0	60.2	101.8	
December.....	82.1	86.8	58.0	101.6	

Stock Exchange Regulation. The combination of a relatively small turnover of securities, which made operations unprofitable except during the brief war rise, and constant pressure from the Securities and Exchange Commission for further reforms caused growing resistance to the SEC on the part of the financial community during the year. The first break in the era of good feeling that was ushered in by the election of William McC. Martin as the first salaried president of the New York Stock Exchange on June 30, 1938, was the appointment of a special committee of members of the New York Stock Exchange to study the Federal security legislation as a whole, with a view to its improvement, on June 17. This committee conferred with representatives of 15 other security exchanges in Washington, and formulated a program of proposed modifications of the law and the regulations issued by the Commission thereunder in order to "equalize competitive conditions affecting securities traded in over-the-counter and securities listed on organized exchanges." The SEC unanimously rejected these recommendations, but they were ratified nevertheless by the Board of Governors of the New York Stock Exchange several days later. The breach between the SEC and the New York Stock Exchange was widened in June when Jerome N. Frank, the newly appointed chairman of the Commission, urged that the Exchange set up a brokerage bank to hold the cash and securities of customers, for their greater protection, and threatened increased direct regulation of member firms by the SEC as an alternative. The Stock Exchange countered with the publication of an adverse report on the brokerage bank proposal by the accounting firm of Haskins and Sells.

The Stock Exchange finally made clear its intention of escaping domination of its management by the SEC through the appointment of a public examining board of leading financiers and industrialists on July 14. This board, which published its report on August 31, made fourteen specific recommendations, including increased capital requirements for member firms, a strengthening of their audit procedure, the separation of underwriting from the commission business, and the establishment of a reserve fund for the Exchange. In addition, it stated that member firms had to have larger revenues, in view of the small turnover, to put their business upon a sound basis, and urged the imposition of service charges on a uniform basis to accomplish this result. In connection with the publication of this report, the president of the Exchange significantly pointed out that it marked the "completion of a broad program begun more

than eighteen months ago with the formation of the Conway Committee," and that henceforth the Exchange management would be concerned with rehabilitating the earning power of the brokerage business, rather than with new reforms. Active steps to establish compulsory service charges on brokerage accounts that had no debit balances were being launched by the close of the year.

The SEC continued to perfect its regulation of the over-the-counter markets through a system of self-policing by the National Association of Security Dealers, to which all dealers, except those concerned with municipal bonds, were to belong. The publication of the very extensive report on investment trusts was continued through the year, but no bill to extend regulation to such institutions was prepared.

New Financing. The volume of new financing was larger in 1939 than in 1938, but this was due entirely to the increase in refunding activity with the rise in high grade bond prices to unprecedentedly high levels. The failure of industry as a whole to seek new capital through the security markets in a volume comparable to that of the twenties was one of the major topics studied by the Temporary National Economic Committee. However, because its hearings on this question threatened to assume a political flavor, since they reflected on the pump-priming activities of the Administration, the committee interrupted them when they came to grips with this problem, after a promising start, and instead sought to restrict

poses. The public offerings of new corporate securities, by months, are shown in the table in the preceding column.

The Federal government, despite its huge deficit, raised only \$1,320,000,000 of new funds, apart from refunding operations, through public offerings of direct and guaranteed obligations during 1939, as compared to \$1,180,000,000 in 1938. This total is exclusive of its sales of United States savings bonds, which yielded \$767,000,000 in additional funds during the year. The character of the financing for State, municipal, Federal agency, and corporate account during the year is shown in the table below.

The increased volume of new construction in 1939 expanded the supply of real estate mortgages coming on the market, which were readily absorbed by life insurance companies, savings and loan associations and banks. F.H.A. insured mortgages continued to meet a ready demand, while the U.S. Housing Authority sponsored issues of bonds by local authorities to finance the Federal slum clearance program.

A scarcity of high grade bonds available for institutional investment again gave rise to a large number of private placements, by which one or a few institutions took over an entire issue of bonds directly from the issuer. Furthermore, several life insurance companies actively sought to make capital loans to individual enterprises in competition with commercial banks.

International Capital Movements. The flight of nervous money to the United States assumed record proportions during the year as a result of the series of acute political crises which culminated in the war. The inflow of capital into this country from abroad was greatly accelerated beginning with March, when the German occupation of the remainder of Czecho-Slovakia caused a heavy inflow of funds from Europe. During the late spring and early summer, the inflow of capital declined sharply, but the crisis immediately preceding the outbreak of war brought a new heavy flow of funds. During the first nine months of the year, the net movement of capital into the United States, as reported by the Treasury Department, aggregated \$1,179,000,000. Details of this influx of capital from abroad, now made available monthly in the Treasury Department Bulletin, are summarized in the table on p. 272.

This flight of capital caused net imports of gold into the United States to exceed \$3,500,000,000 during 1939 for the first time in history. The bulk of this gold came from the United Kingdom and represented both heavy transfers of capital from Great Britain to the United States and shipments

NEW PUBLIC FINANCING, 1939

[Thousands of dollars]

Month	Total	New Capital	Refunding
January	16,312	5,926	10,386
February	159,686	23,571	136,115
March	99,668	52,979	46,689
April	259,909	78,160	181,749
May	187,242	21,740	165,502
June	282,019	30,241	251,798
July	230,577	50,139	180,438
August	343,357	25,895	317,463
September	95,115	16,019	79,096
October	175,514	18,200	157,314
November	112,200	21,408	90,792
December	221,252	26,971	194,281

Commercial and Financial Chronicle—revised series.

itself to such issues as competitive bidding in the sale of new issues of securities and the decentralization of the investment banking business of the country. Bankers criticized this limitation of the inquiry's scope, claiming that the value of the entire inquiry was jeopardized thereby.

Out of the total of \$2,178,873,405 of new corporate financing consummated during 1939, \$1,807,623,508 or 83 per cent, was for refunding pur-

[SUMMARY OF NEW FINANCING]

[In millions of dollars]

Year	Total (New and refunding)	Total new capital	Total domestic	New Capital				Corporate Bonds & notes	Stocks	Foreign ^a	Total refunding
				State and municipal ^a	Federal agencies ^b						
1928	9,992	8,114	6,789	1,379	64	2,385	2,961	1,325	1,877		
1929	11,592	10,183	9,420	1,418	0	2,078	5,924	763	1,409		
1930	7,677	7,023	6,004	2,980	87	2,980	1,503	1,019	654		
1931	4,023	3,116	2,860	1,235	75	1,239	311	256	907		
1932	1,730	1,192	1,165	762	77	305	20	27	538		
1933	1,054	710	708	483	64	40	120	2	344		
1934	2,212	1,386	1,386	803	405	144	35	0	826		
1935	4,752	1,412	1,409	855	150	334	69	3	3,340		
1936	6,254	1,973	1,972	735	22	839	352	25	4,281		
1937	4,001	2,101	2,098	712	157	817	408	3	1,901		
1938	4,458	2,354	2,329	971	481	807	65	25	2,104		
1939	5,837	2,293	2,234	938	924	280	91	59	3,543		

^a Includes issues of noncontiguous U.S. Territories and Possessions. ^b Includes publicly offered issues of Federal land banks, Federal intermediate credit banks, Federal Farm Mortgage Corporation, and Home Owners' Loan Corporation, excludes direct obligations of U.S. Treasury. ^c Figures do not include funds obtained by States and municipalities from any agency of the Federal government.

CAPITAL MOVEMENTS INTO THE UNITED STATES

[In millions of dollars]

Jan. 2, 1935, through	Total	Total	In bank balances		In broker- age balances	In securities		
			Increase in foreign funds in U.S.	Decrease in U.S. funds abroad		Total	Domestic	Foreign
1935 Dec. 31.....	1,412.5	964.6	603.3	361.4	6.0	441.8	316.7	125.2
1936 Dec. 30.....	2,608.4	1,362.0	930.5	431.5	12.9	1,233.6	917.4	316.2
1937 Dec. 29.....	3,410.3	1,617.6	1,168.5	449.1	47.5	1,745.2	1,162.0	583.2
1938 Dec. 28.....	3,779.2	1,910.8	1,432.7	478.1	47.6	1,820.9	1,210.9	610.0
1939 Mar. 29.....	4,134.7	2,243.5	1,693.0	550.5	63.9	1,827.3	1,180.6	646.7
June 28.....	4,595.6	2,657.8	2,048.3	609.5	74.0	1,863.8	1,199.3	664.5
Sept. 27.....	4,958.7	3,034.2	2,412.4	621.8	83.1	1,841.3	1,164.4	676.9

CAPITAL MOVEMENT, BY COUNTRIES

[In millions of dollars]

Jan. 2, 1935, through	Total	United Kingdom	France	Netherlands	Switzerland	Germany	Italy	Other Europe	Total Europe	Canada	Latin America	Far East	All Other
1935 Dec. 31.....	1,412.5	554.9	210.2	114.5	130.4	36.6	24.0	130.0	1,200.6	(*)	70.9	128.3	12.7
1936 Dec. 30.....	2,608.4	829.3	299.5	229.7	335.5	83.1	45.6	228.5	2,051.3	150.5	201.2	184.0	21.4
1937 Dec. 29.....	3,410.3	993.7	281.7	311.9	607.5	123.9	22.1	312.2	2,653.0	106.3	410.6	224.6	15.9
1938 Dec. 28.....	3,779.2	1,186.1	339.5	324.6	554.0	140.7	33.0	463.8	3,041.7	157.2	389.5	156.8	34.1
1939 Mar. 29.....	4,134.7	1,203.1	366.8	383.6	587.6	150.2	24.7	536.8	3,252.9	185.1	443.5	206.4	46.8
June 28.....	4,595.6	1,360.2	439.7	401.0	599.2	149.5	29.5	604.2	3,583.3	230.5	500.2	223.8	57.9
Sept. 27.....	4,958.7	1,368.1	459.6	448.4	671.1	151.1	32.9	686.0	3,817.0	260.9	528.0	276.4	76.2

* Inflow less than \$50,000.

of newly produced gold and gold emanating from the monetary stocks of other countries through London's financial machinery. There was also considerable transfer of gold to this country by other central banks which wished to keep part of their reserves here under earmark, to escape the threat of confiscation by an invader. The sources of the gold imports received by the United States during the year, with comparisons with preceding years, are shown in the table below.

The enormous gold imports caused the mone-

postponing changes in the monetary policy of the United States, and particularly the unlimited purchase of gold by the Treasury at \$35 per oz., until that time.

See BANKS AND BANKING; BUSINESS REVIEW; INTERNATIONAL BANKING AND FINANCE; MONEY; PUBLIC FINANCE; RECONSTRUCTION FINANCE CORPORATION; TREASURY, U.S. DEPARTMENT OF; and the sections on *Finance* under the various countries.

JULES I. BOGEN.

GOLD MOVEMENTS TO AND FROM THE UNITED STATES

[In thousands of dollars, at approximately \$35 an ounce]

Year	Total net imports or net exports (—)	United Kingdom	Net imports from or net exports (—) to							Japan	British India
			France	Belgium	Netherlands	Switzerland	Canada	Australia			
1934.....	1,131,994	499,870	260,223	8,902	94,348	12,402	86,829	1,029		4	76,820
1935.....	1,739,019	315,727	934,243	3	227,185	968	95,171	3,498			75,268
1936.....	1,116,584	174,093	573,671	3,351	71,006	7,511	72,648	23,280			77,892
1937.....	1,585,503	891,531	—13,710	90,859	6,461	54,452	111,480	34,713			50,762
1938.....	1,973,569	1,208,728	81,135	15,488	163,049	1,363	76,315	39,162			166,740
1939.....	3,573,906	1,826,391	3,798	165,122	341,373	86,986	612,543	74,249		165,605	52,868

* Preliminary

tary gold stock of the United States to increase by leaps and bounds. As upwards of 60 per cent of the monetary gold supply of the world is now held by the United States, the question was widely asked whether it could be hoped that the world's gold would ever be redistributed and the monetary systems of the major nations restored to a gold standard. A protracted European war, it was widely assumed, would cause a very large part of the balance of the monetary gold supply of the world to come to the United States. However, since a cessation of gold purchases would tend to raise the value of the dollar in the foreign exchange markets and thus exert a deflationary effect upon some commodity prices and economic conditions in this country, and since Great Britain and France relied upon their ability to sell gold to this country to finance purchases of needed materials and supplies in the event of a long war, the Administration preferred to suspend consideration of remedial action until some future date. Furthermore, it was widely felt that, until the end of the war, it was not possible to determine what course the monetary policies of other countries would take, so that there was much to be said for

FINANCIAL SITUATION. See MONEY.

FINE ARTS. See ART EXHIBITIONS; ART MUSEUMS; LITERATURE, ENGLISH AND AMERICAN; PAINTING; SCULPTURE; DRAMA; MUSIC; FRENCH LITERATURE, ETC.

FINGERPRINTS. See LAW; FEDERAL BUREAU OF INVESTIGATION.

FINLAND. A republic of Northern Europe. Capital, Helsinki (Helsingfors).

Area and Population. Finland has a land area of 134,547 square miles and a population (Jan. 1, 1938, estimate) of 3,834,662 (3,667,067 at the 1930 census). Of the 1938 population, 3,008,814 lived in rural and 825,848 in urban communities. Finnish-speaking inhabitants (1936) comprised 89.4 per cent of the total; Swedish-speaking, 10.1 per cent. Living births in 1937 numbered 72,319 (20.0 per 1000); deaths, 47,150 (13.1 per 1000); marriages, 32,464 (9.0 per 1000). Estimated populations of the chief cities in 1937 were: Helsinki (Helsingfors), 293,237; Viipuri (Viborg), 73,917; Turku (Åbo), 72,981; Tampere (Tammerfors), 74,736; Vaasa (Vasa), 32,108; Oulu (Uleåborg), 27,224; Lahti, 25,714; Kuopio, 24,691; Kotka, 21,448; Pori (Björneborg), 20,974. Swed-



Wide World

FINNISH VICTORY AT SUOMUSSALMI

This jumble of abandoned military equipment and supplies indicates the disaster that overtook the Soviet 44th Division in the last days of December, 1939. Finnish troops are searching the wreckage for articles of value.



Brown Brothers

A SOVIET TANK UNIT

Part of the mechanized Russian forces that launched the invasion of Finland on Nov. 30, 1939.

THE RUSSO-FINNISH WAR



Brown Brothers

A SECTION OF THE FINNISH CAPITAL DESTROYED BY SOVIET INCENDIARY AND DEMOLITION BOMBS



Brown Brothers

PRESIDENT KYOSTI KALLIO, KING HAAKON OF NORWAY, KING GUSTAV OF SWEDEN AND KING CHRISTIAN OF DENMARK (left to right) CONFERRING IN STOCKHOLM OCT 18-19, 1939

ish place names are given above in parentheses.

National Defense. Military service is compulsory and every citizen is liable to service from the age of 17 to 60. See *EUROPEAN WAR* for statistics.

Education and Religion. The population of school age (7 to 15 years) was 590,417 in 1936. School attendance was: Primary, 480,413 in 1936-37; secondary, 50,580 in 1936-37; university and schools for higher education, 8214 in 1937-38. Less than 1 per cent of the adult population was illiterate in 1930. The population on Jan. 1, 1937, included 3,654,751 Lutherans, 70,445 Greek Catholics, 9909 Baptists and other evangelical church members, 1541 Roman Catholics, 1756 Jews, and 347 Moslems.

Production. About 6,368,000 acres (7.5 per cent of the total area) were under cultivation in 1937. (Agriculture engaged 60 per cent and industry 16.8 per cent of the working population at the 1930 census.) Crops harvested in 1937 were valued at about 7,025,000,000 marks. Yields of the chief cereals in 1939 were (in metric tons): Wheat, 227,000; barley, 192,020; rye, 331,000; oats, 798,000. The 1938 potato crop was 44,014,000 bu.; flax and hemp, 2,218,000 lb.; hay (1937), 3,795,000 metric tons. Livestock statistics for 1937 were: Cattle, 1,925,000; sheep, 1,072,000; goats, 10,000; swine, 504,000; horses, 380,000; reindeer, 100,000; poultry (1936), 2,888,000. Animal products in 1937 were: Butter, 29,700 metric tons; cheese, 9500 metric tons. Some asbestos, copper, gold, lead, peat, zinc, and nickel are mined. See under *History* the account of the Petsamo nickel mines.

Forests are a great source of wealth. Growing stock of timber in 1939 was estimated at 57,214,000,000 cu. ft.; merchantable timber, 1,557,000,000 trees (60.7 per cent pine, 28.1 per cent spruce; remainder deciduous, mostly birch); annual increment, about 1,568,000,000 board ft.; annual fellings, about 1,413,000,000 board ft.

Industrial production in 1937 was valued at 21,076,000,000 marks. The principal products were: Wood pulp, 2,131,000 metric tons; paper, 762,000 metric tons. Chemical wood pulp output, 1938, was 1,442,000 metric tons. Other chief products with their 1936 output were: Lumber, 2,386,000 bd. ft.; spools (for thread), 3,879,000 gross; shoes and galoshes, 4,310,000 pairs; cotton yarn and fabric, 24,923,000 lb.; bricks, 121,053,000; matches, 369,701,000 boxes; cigarettes, 3,620,000,000; margarine, 25,889,000 lb. The total number of registered unemployed in January, 1939, was 21,502 as compared with 17,778 in December, 1935, the last previous tabulation (winter unemployment is mostly seasonal). Unemployed in August, 1939, totaled 2466.

Foreign Trade. General imports in 1938 totaled 8,612,300,000 marks (9,306,423,000 in 1937) and general exports were 8,431,000,000 marks (9,379,724,000 in 1937). The United Kingdom supplied 22 per cent of the 1938 imports by value, Germany 20, Sweden 13, and the United States 9. Of the exports, 44 per cent went to the United Kingdom, 15 to Germany, and 9 to the United States. See *IMPORTS AND EXPORTS*.

Finance. The budget estimates for 1940 placed revenue at 5,767,300,000 marks; expenditure, 5,752,000,000 marks; as compared with revenue of 5,666,400,000 and expenditure of 5,743,600,000 in 1939. The Minister of Finance announced (Sept. 1, 1939) that recent international events would probably make it necessary to revise the 1940 budget estimates. Actual revenue for 1938 totaled 5,534,-

700,000 marks; expenditure, 5,432,800,000 marks. The public debt was 3,371,327,152 marks on Dec. 31, 1938.

The Finnish mark after 1931 was linked to the pound sterling at the rate of 227 marks to £1. On Aug. 28, 1939, the Bank of Finland announced that the mark would be pegged instead to the U.S. dollar at the rate of 49.35 marks to \$1. The mark averaged \$0.0218 in 1937; \$0.0216 in 1938; and \$0.0199 (nominal) in 1939.

Transportation. The railway mileage in 1939 was 5107 miles (mostly operated by the state). There were two long south to north main lines from Kotka to Kontiamaki and from Helsinki to Kauliranta. West of Torino a railway bridge crossed the frontier river and connected with the Swedish town of Haparanda. A third railway ran from Viborg through Nurmes to Uleåborg (Oulu). The three above-mentioned railroads were connected by two east to west lines from Viborg to Richimaki and Elisenvaara to Haapamaki. The only railway connection with Russia was at Rajajoki, 214.4 miles from Helsinki on the Viborg-Leningrad line. Smaller state and private lines feed the larger railways, especially along the Baltic and the Gulf of Bothnia. The state lines in 1938 carried 22,380,000 passengers and 13,731,189 metric tons of freight; the gross receipts totaling 1,075,281,233 marks. Highways and roads aggregated 39,631 miles in 1939 (see *ROADS AND STREETS*). The highway budget for 1939 amounted to 305,800,000 marks. In 1939 there were three civil air services covering 741 route miles. The gross tonnage of the Finnish merchant marine on June 30, 1938, was 579,600. The tonnage of vessels entering Finnish ports with cargo in 1938 was 3,648,000; cleared, 5,100,000.

Government. Under the Constitution of July 17, 1919, executive power is vested in a president elected for six years by 300 electors, chosen by direct suffrage in the same manner as members of the Diet. Legislative power rests with the unicameral Diet and the President. The 200 members of the Diet are elected by direct vote of all citizens, male and female, 24 years or more of age. The cabinet is appointed by the President, but is responsible to the Diet. President in 1939, Kyösti Kallio, who assumed office Mar. 1, 1937. Premier at the beginning of 1939, Aimo Kaarlo Cajander (National Progressive), heading a cabinet comprising representatives of the Social Democratic, Agrarian, and National Progressive parties. For changes in 1939, see *History*.

HISTORY

The threat of a Soviet attempt to reconquer Finland had hung over the little republic ever since it broke away from Bolshevik Russia on Dec. 6, 1917. On Nov. 30, 1939, this threat became a reality when the Moscow government, after vain efforts to obtain what amounted to a protectorate over the Finns, launched an attack upon them by land, air, and sea. Finland met the attack with courage and skill and at the end of the year was holding its own everywhere except in the air; there Russian planes, operating virtually unopposed, were turning Finnish cities into shambles with repeated bombing raids. For a full description of the Russo-Finnish war, see *EUROPEAN WAR* under *The Russian Front*.

Defense of Åland Islands. Fearing that Finland's strategic position might again make it the battleground of hostile German and Soviet forces, and anticipating a German-Russian race to seize

control of the Åland Islands at the entrance to the Gulf of Bothnia, the Finnish Government in 1938 speeded up defensive preparations and sought to reach an agreement with Sweden and the Åland islanders for fortification of those islands (see 1938 YEAR BOOK, p. 254).

On Jan. 7, 1939, the Finnish and Swedish governments agreed on final plans for defending the islands and the Diet at Helsinki later voted credits for the construction of forts there. But the work was held up when the Soviet Union objected and blocked approval of the remilitarization project by the May session of the League of Nations. However Finnish troops were sent to the islands after the outbreak of war between Germany and the Anglo-French-Polish bloc in September. Later, when Russia attacked Finland, Sweden co-operated in the defense of the Gulf of Bothnia by mining all of the waters on its side of the Åland Islands. The Finns having fortified the islands and mined the other side, the gulf was completely closed to Soviet warships.

Finland's Struggle for Neutrality. Throughout the spring and summer of 1939 the Helsinki Government collaborated with the other small democracies of northwestern Europe in efforts to prevent being dragged into the approaching European conflict. Finland, Norway, and Sweden rejected Chancellor Hitler's offer of a non-aggression pact, made before the Reichstag April 28. Their Foreign Ministers met in Stockholm May 9 and declared their determination to "keep outside all groups of powers that may be formed in Europe."

Finland likewise objected vigorously when the Soviet Government in the spring of 1939 demanded a joint Anglo-French-Soviet guarantee of the "neutrality and independence" of the Baltic states (including Finland) as the price of Russian military collaboration with Britain and France against Germany. Speaking before the Diet on June 6 Foreign Minister Erkkö said:

... Such a guarantee cannot be accepted. It is not compatible with Finland's independence and sovereignty, and Finland is bound to treat as an aggressor every power that on the strength of such a self-assumed guarantee intends to extend its so-called assistance when, perhaps, it considers the guaranteed state needs it.

The Finnish nation is determined to protect its neutrality to the bitter end. Nobody can convince us that if we, in the name of peace, should be dragged into the great powers' constellations, it could help the world or ourselves.

In the early summer of 1939, according to British sources, the Soviet Government secretly offered to conclude a mutual assistance pact with Britain and France in return for a free hand in the Baltic and the right to establish military bases in the Åland Islands, Finland and the other Baltic states. The British and French declined to conclude such a pact over the objections of the Baltic states. The Russians then turned to Germany, which agreed to these terms in return for Russian economic assistance and neutrality in the German military conflict with Britain and France.

In June Finnish alarm at the increasingly critical European situation was shown by the voluntary mobilization of thousands of university students and young militiamen to strengthen the fortifications of the Mannerheim Line and other border defenses. Voluntary contributions for the purchase of arms and supplies totaled 10,000,000 Finnish marks before the end of June.

Prelude to War. The crisis that the Finns feared began in October, after Hitler's recognition of Soviet supremacy in the Baltic states had en-

abled Moscow to commence the transformation of Estonia, Latvia, and Lithuania into military allies and virtual protectorates of the Soviet Union. On October 7 the dreaded call came to Finland to send representatives to Moscow to hear proposals for the "readjustment" of Soviet-Finnish relations. The Finnish Government dispatched a delegation headed by Dr. Juho K. Paasikivi. At the same time Foreign Minister Erkkö warned that "Finland will not sign a dictated agreement incompatible with her integrity and her neutrality. . . . The fact that Finland has sent a representative to Moscow only denotes that Finland is prepared to conduct friendly negotiations."

While anxiously awaiting news of Soviet intentions, the Finns replied to reports of Russian troop concentrations near the border by calling up about 300,000 troops to man frontier fortifications. The fleet was mobilized. Evacuation of civilians from Helsinki and other cities was begun. At the same time successful efforts were made to enlist moral support from other countries to aid Finland in resisting Soviet demands. The governments of the United States, Great Britain, Norway, Sweden, and Denmark all sent their diplomatic representatives in Moscow to the Kremlin with notes urging that the Soviet Union respect Finland's neutrality and maintain peaceful relations. On October 18-19 the Kings of Denmark, Norway, and Sweden and the Finnish President conferred in Stockholm. Their joint communiqué stressed Scandinavian unity, but no promise of military support for Finland against Russia was forthcoming.

The Russian Demands. Meanwhile the Soviet Government on October 14 had presented its demands to the Finnish delegation. They were summarized from the Finnish *White Book* of December 11 as follows:

The abolition of the fortified zones situated on both sides of the frontier between Finland and the Soviet Union, leaving frontier guards only.

The Soviet Union had no objection to the fortification of the Åland Islands by Finland provided that no foreign power—Sweden included—was concerned in their fortification.

The adjustment of the frontier in the north in the Petsamo region, where the frontier was "badly and artificially drawn."

The leasing to the Soviet Union for 30 years of the port of Hangö and the territory adjoining situated within a radius of five to six nautical miles to the south and east, and three to the north and west, for the purpose of establishing a naval base with coastal artillery capable, in conjunction with the naval base at Baltic Port (Estonia) of blocking access to the Gulf of Finland.

For the "protection" of the Hangö base Russia sought the right to "keep in the port of Hangö a garrison of one infantry regiment, two anti-aircraft batteries, three air force regiments and one battalion of armored cars, altogether to total not more than 5000 men."

The leasing to the Soviet Union the right of using the Bay of Latsoja as an anchorage for Soviet ships.

Finland to cede to Russia the five islands in the eastern end of the Gulf of Finland and that portion of the Karelian Isthmus from the village of Lippola to the town of Koivisto [near which the Finnish fighting lines were situated] as well as an area around Kalastajasarento—a total of 866 square miles. Among other things this would remove the Finnish frontier in the Karelian Isthmus, which was within gun range of Leningrad, to a greater distance.

In exchange the Soviet Union agreed to "cede to the Republic of Finland the Soviet Union's territory in the district of Repola and Porajärvi"—an area of 2134 square miles.

A strengthening of the Soviet-Finnish treaty of non-aggression with a paragraph "According to which the contracting parties undertake not to join any groups or alliance directly or indirectly hostile to either of the contracting parties."

Deadlock in Negotiations. The Finnish delegation returned to Helsinki with these proposals to consult their government. It returned to Moscow with compromise proposals, submitted Octo-

ber 23. The Finns agreed to cede Russia the islands in the eastern end of the Gulf of Finland with the exception of Hogland, which was left open for further discussion. However they firmly refused to grant the Soviet demands regarding Hangö as "inconsistent with Finland's policy of strict neutrality." The Finns also declined to abolish their frontier fortifications, as this would leave the country open to a Soviet invasion.

The Soviet Government, however, declared that its demands were "minimum" ones. Asserting that a Soviet military and air base at Hangö was "absolutely indispensable," it later offered to buy Hangö and the adjoining territory outright. The Finnish delegations, after returning again to Helsinki for instructions, returned on November 2 with a refusal to make concessions on these vital points, although accepting "in principle" almost two-thirds of the Soviet proposals. The Finnish answer had the unanimous support of Cabinet and parliamentary leaders of all parties.

The Finnish delegation continued the discussions in Moscow until November 9 without reaching an agreement. After the negotiations collapsed, they remained in the Soviet capital until November 13 in the hope that the Kremlin would moderate its demands. However Soviet authorities had already indicated their determination to force Finnish acquiescence. Beginning late in October the Russian press and radio unleashed a barrage of denunciations and threats against Finland, while Soviet military and air activities along the frontier led the Finns to expect an attack at any moment. The Finns made extensive counter-preparations, maintaining the nation on a virtual war footing at a cost of some 40,000,000 marks daily.

Outbreak of War. The "war of nerves" continued throughout November, with no sign of Finnish capitulation. On November 26 the Soviet Government charged that Finnish artillery had fired into Russian territory, killing four Russian soldiers and wounding nine others. The same evening Premier Molotov formally proposed that the Finnish Government "withdraw its troops without delay 20 to 25 kilometers farther from the border on the Karelian Isthmus, thus preventing the possibility of a repeated provocation." The Finnish response of November 27 denied that Finnish artillery had fired into Soviet territory, and suggested an investigation of the alleged incident by a joint commission in accordance with the Finnish-Soviet frontier convention. It also agreed to discuss removal of troops "by both sides to a fixed distance from the frontier."

Premier Molotov countered on the following day with a note denouncing the Soviet-Finnish non-aggression pact, concluded in 1932, on the following grounds:

By concentrating large forces of regular troops near Leningrad and thus placing under immediate threat the most important and vital center of the U.S.S.R., the Government of Finland committed a hostile act toward the U.S.S.R., incompatible with the non-aggression pact concluded between the two countries. Moreover, by refusing to withdraw its troops at least 20-25 kilometers after the villainous shelling of Soviet troops by Finnish troops, the Government of Finland has shown that it continues to maintain a hostile attitude toward the U.S.S.R., does not intend to pay regard to the provisions of the non-aggression pact and has decided to keep Leningrad under threat in the future.

On November 29 the Finnish Foreign Minister again denied the Soviet accusations and offered to submit the frontier incident to neutral arbitration. To refute the Soviet charge that Finland threatened the security of Leningrad he said his govern-

ment "is ready to settle with the Soviet Government the question of the removal of Finnish defense forces stationed on the Karelian Isthmus with the exception of frontier customs guard forces, to such a distance from Leningrad that it could not even be alleged that they threaten its security."

At 10:30 p.m. the same day the Soviet Government severed diplomatic relations with Finland and early the next morning (November 30) Soviet troops launched their invasion of Finland while Red Army planes rained bombs on Helsinki and other Finnish cities.

Finnish Cabinet Resigns. In a final effort to avert the conflict, the Finnish Cabinet headed by Premier Aimo Cajander resigned early on December 1 and a new Ministry headed by Risto Ryti was installed in a futile effort to conclude an armistice and continue the negotiations. It was a coalition of the Social Democratic, Agrarian, National Progressive, Swedish People's, and National Coalition parties, holding 189 of the 200 seats in the Diet. Excluded from the coalition were the pro-Fascist Patriotic National Movement, with 8 seats, and the Small Farmers and Åland Islanders, with 3 seats.

The Terijoki "Government." Hope of resuming negotiations with Moscow was nullified, however, when the Soviet Government on December 1 set up in the Finnish border town of Terijoki a puppet "Peoples' Government of the Finnish Democratic Republic," with Otto Kuusinen, a Finnish Communist exile who had lived in Moscow for two decades, as Premier and Foreign Minister. This regime immediately issued a proclamation calling upon the "long-suffering, toiling people of Finland" to "arise to the courageous fight against the tyranny of your oppressors and hangmen." Its program called for peace and "lasting and friendly relations with the Soviet Union," state control over large banks and industrial enterprises, state assistance to medium and petty enterprises, elimination of unemployment, reduction of the working day and house rents, summer vacations for workers, confiscation of large landed estates, exemption of peasants from payment of tax arrears, and state assistance of various kinds to workers and poor peasants.

On December 2 the Moscow authorities announced the conclusion of a 25-year pact of military alliance, mutual assistance and friendship with the Terijoki regime. The pact granted Russia all the demands the Kremlin had made upon the Helsinki government. It stipulated that "exchange of instruments of ratification will be effected in the shortest possible time in the capital of Finland—the city of Helsinki."

Thereafter the Soviet Government refused to admit that the Helsinki Government was entitled to speak for the Finnish nation. On December 3 the Ryti Government informed the Soviet Union through the Swedish Government that it was prepared to open negotiations for a peaceful settlement. It received no answer.

Foreign Assistance. In undertaking a last-ditch fight for their liberties, the Finns received moral support and substantial material aid from many governments and peoples. The governments of the other Scandinavian countries, Great Britain, and the United States sought through futile appeals and representations in Moscow to prevent the Soviet invasion. When the attack began on November 30 a great surge of indignation swept the world, with the exception of the Soviet Union and

Germany. This indignation found expression in the expulsion of Russia from the League of Nations (q.v.), after Moscow had declined to halt its invasion of Finland. The League then prepared the way for the extension of material assistance to Finland by those member states desirous of aiding the Finns.

By the third week of the war foreign volunteers, supplies, funds and money began to flow into Finland in substantial, though not decisive, quantities, especially from Sweden and Norway. Private and public contributions of foodstuffs, clothing, and other non-military supplies came from many countries. The Vatican sent funds for relief of Finnish Catholics. A large Finnish relief fund was raised in the United States under the leadership of ex-President Hoover. On December 10 the United States Government opened a \$10,000,000 credit to Finland for the purchase of "agricultural surpluses and other civilian supplies." A few days later the Finnish Government paid its regular semi-annual installment on its war debt to the United States. On December 18 it was announced that Washington had given the Finnish Government priority for the purchase of American war planes on order by the U.S. Navy.

Late in December the Allied Supreme War Council decided to supply the Finns with some arms and planes. Up to the end of the year, Sweden was reported to have supplied the bulk of the foreign arms and munitions reaching Finland. However the volunteers, arms, munitions, and planes that trickled into Finland were not believed to be sufficient to enable prolonged defense of the country against Soviet military might.

Elections, etc. The Soviet claim that the Helsinki Government was a government of "White Guard bandits and reactionary landlords" was refuted by the victory of the liberal government coalition in the Finnish elections held the first week-end in July, 1939. The Social Democratic-Agrarian-National Progressive coalition supporting Premier Cajander won a striking victory, capturing 147 out of 200 seats in the Diet, while the pro-Fascist Patriotic National Movement lost 6 of its 14 seats. Standing of the parties in the new Diet, with the previous standing in parenthesis, was: Social Democrats, 85 (83); Agrarian, 56 (53); National Coalition, 25 (21); Swedish people's, 17 (21); Patriotic National Movement, 8 (14); National Progressives, 6 (7); Small Farmers, 2 (1); Aland Islanders, 1 (1). The newly elected Diet was scheduled to convene early in 1940.

Even before the Russian attack, Finland was suffering severe economic hardships as a result of the curtailment of trade due to the Anglo-French-German war. Five Finnish merchant ships of 11,919 gross tons were sunk by belligerent mines and German submarines up to December 31. There was growing unemployment, shortages of goods, price rises, and slackening of production in many lines, forcing the government to take remedial action. One such measure was the hastening of construction of a concrete automobile highway along the Swedish-Finnish border from Kemi to an ice-free Norwegian port. This was expected to be completed by the summer of 1940.

One result of the fighting in Northern Finland was the capture by Russian troops of the Petsamo nickel mine, which the International Nickel Co., was in process of opening up. The company had spent over \$5,000,000 on mine, smelter hydro-electric plants, etc., before the war broke out and pro-

duction was to have started in 1940. Finnish troops were said to have dynamited the mine and burned all the buildings before withdrawing from the Petsamo district.

See DENMARK, ESTONIA, GREAT BRITAIN, NORWAY, and SWEDEN under *History*; UNITED STATES under *Foreign Affairs*; also BRIDGES, COMMUNISM, FASCISM, INDUSTRIAL CHEMISTRY, LEAGUE OF NATIONS, REPARATIONS AND WAR DEBTS.

FIRE INSURANCE. See *INSURANCE*.

FIRE PROTECTION. The preliminary estimate of fire losses in the United States for the year 1939 shows an increase of \$11,448,840 over a similar estimate for 1938. This change apparently reflects the slight improvement in business conditions during the year. That business conditions affect fire loss directly is again shown by the fact that losses for the last three months of 1939 run behind the losses for the same months in 1938 during which time business took a brief and sudden upswing.

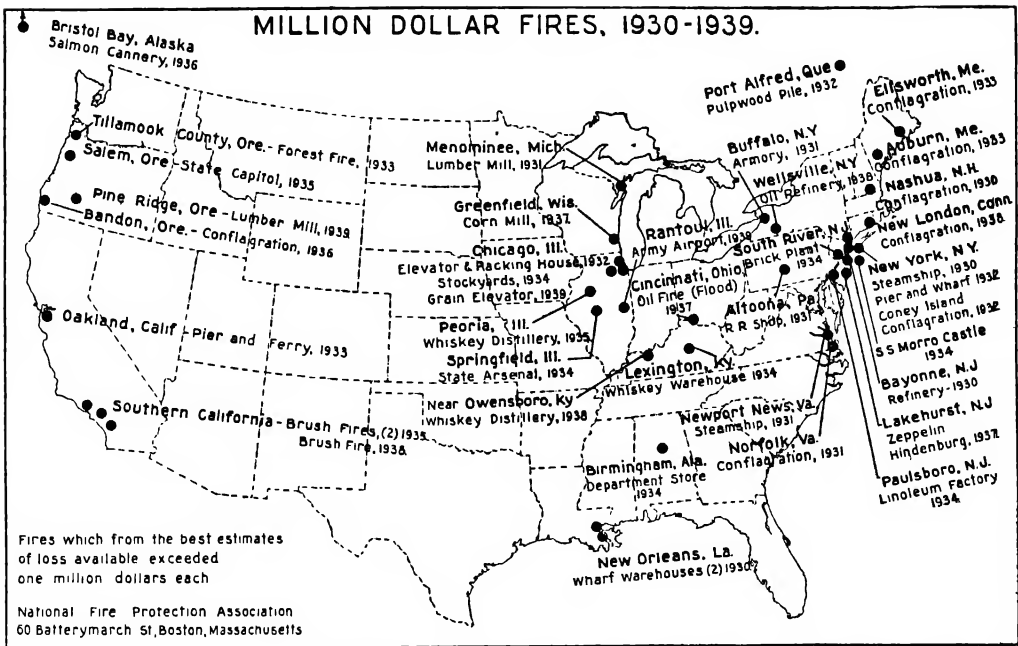
Far and away the greatest single U.S. fire loss this year was caused by the Chicago dust explosion which destroyed five grain elevators with a loss of \$3,500,000 on May 11. This fire was also fatal to nine employees. Contributing factors in this fire were wrecking of automatic sprinkler protection in the explosion, old type crib construction, and very large interior areas. The fire illustrates the reason why the prevention of dust explosions continues to demand much of the attention of fire protection engineers. The N.F.P.A. has newly published a book of 13 separate standards for the prevention of different types of dust explosions to meet a great demand.

One of the triumphs of the year was the prevention of great forest fires in the hurricane areas of the New England States. Federal and state agencies combined to provide efficient and mobile fire fighting units in these states, and though many fires started, rapid fire fighting kept any of them from burning as much as a square mile. A severe drought that occurred during the summer months made this accomplishment even more memorable.

The largest loss of life in a single fire during the year occurred in Halifax, Nova Scotia, when the Queen Hotel burned. As is usual in such fires, open stairways and elevator shafts were responsible for the rapid spread of the fire, trapping people in their rooms. Early reports of the Marlborough Hotel fire in Minneapolis on January 3 of 1940 indicate that a similar condition existed. Such tragedies are the direct result of ignoring the cardinal principles of the National Building Exits Code.

Schools of instruction for firemen continued to gain favor during 1939. Oklahoma Agricultural and Mechanical College offered, in its school of Technical Training, a special course in firemanship. The college built a special building for the course which houses modern apparatus and gives students a chance to respond to alarms and fight local fires as part of their training.

In addition, fire colleges or instructors' schools (established in most instances for advanced training or for training fire-school instructors) were held in 26 states with an attendance of 7367 men. One hundred and fifty-nine regional or district short courses which extend the training program to volunteer and part paid departments were held, with a total attendance of 9332 men. Traveling instructors in several states gave instruction to 1111 departments and 26,899 men.



From the best figures available it is estimated that \$95,522,000 damage resulted from the 41 individual million dollar or greater losses recorded during the ten years, 1930-39 inclusive. Thus the average loss from these great fires was \$2,330,000. Of the 41 fires, 23 caused losses between 1 and 2 million dollars, 11 caused losses of between 2 and 3 million dollars, 6 caused losses of 3 to 5 million dollars, and one fire caused an estimated loss of twenty million dollars.

Growing numbers of departments and men received purely local training.

Sixteen states offered definite, measured training courses this year. These courses are set up generally under the state department of education. They offer elementary and advanced training. Total number of men receiving this type of training in 1939 was 9796. It is estimated that over 70,000 firemen received some training this year.

An important part of the municipal fire protection scheme continues to be the fire prevention bureau. Such bureaus are now operating in 86 of the 95 U.S. cities of over 100,000 population and in many smaller cities. Through regular inspection work and authority to command fire prevention precautions as well as through continual fire prevention education work, the fire prevention bureaus have been a large factor in the shift of the heaviest fire loss to the rural and small town areas.

The fire breeding wooden shingle roof is now prohibited throughout the city limits of 658 cities and within the fire limits of many others.

This year the emphasis of the Fire Prevention Week Campaign was applied with increased vigor in rural and small communities. The National Fire Protection Association, the Agricultural Committee of the National Fire Waste Forum, leading farm journals, farm bureaus, 4-H clubs, and rural fire departments joined in carrying the program of fire prevention education to the rural areas. Rural fire protection districts have been organized in many areas and provided with apparatus and men for fighting farm fires. Development of farm water supplies is being encouraged.

Technical schools and colleges throughout the country are expressing interest in including appro-

appropriate fire-protection-engineering instruction. To aid this healthy development which should eventually provide engineers trained in fire protection for every industrial plant in the country, the N.F.P.A. has appointed a committee on fire protection engineering education. The chairman of this committee is Walter R. MacCormack, Dean of Architecture, Massachusetts Institute of Technology.

Two unique fire protection problems were offered this year in the form of the Golden Gate International Exposition, and the New York World's Fair. Temporary buildings did not justify the expense of fire-resistive construction and fire protection of the character provided for permanent buildings. Yet huge values and many lives were at stake. Both fairs provided fire departments backed by good water supply and regular municipal alarm systems. Automatic alarm systems were installed in many buildings, sprinklers in a few. Fires which started were successfully controlled through rapid response of adequate equipment.

It is reported that of the 423,000,000 acres of forest land needing fire protection, only a little more than half has thus far been brought under organized fire control. Forest fire control technology is being developed rapidly. Experimental use of foam is continuing and tests have shown that the use of certain chemicals, particularly monoammonium phosphate, materially increase the extinguishing power of water. A power tool for digging forest trenches developed recently, has been used extensively during the past year. Fire weather forecasting has been developed, and though it fails occasionally, is becoming increasingly valuable in preparing protection. See FORESTRY; CIVILIAN CONSERVATION CORPS; IDAHO.

The use of carbon dioxide for fire extinguish-

ment was further developed during the year and tests were made on large quantity application in building fires from tank trucks. The full scope of application of this method of extinguishment can be determined only by such experience as will enable a balance to be made between the cost of extinguishment and the saving effected by the more rapid extinguishment and less damage to construction and contents than would obtain with water. Carbon dioxide was successfully used as an accessory in the extinguishment of a pile of oily metal scraps and filings in Lorain, Ohio. The pile was spread with a clam-shell scoop, which was kept cool by the gas.

The 1939 Fire Loss. The preliminary estimate of the fire loss in the United States for the year 1939 is \$313,498,840. This amount is based on estimates compiled by the National Board of Fire Underwriters. It is more than \$10,000,000 greater than the 1938 preliminary loss estimate, and shows the result of the greater losses during the months from February to August.

COMPARATIVE MONTHLY LOSS ESTIMATES

	1937	1938	1939
January...	\$ 25,069,895	\$ 27,676,337	\$ 27,615,316
February...	28,654,962	26,472,626	29,303,520
March...	29,319,029	29,050,968	30,682,168
April...	26,663,854	25,616,112	27,061,522
May...	21,437,739	22,917,577	27,031,700
June...	19,524,765	19,473,617	24,190,700
July...	19,812,485	20,434,688	22,468,304
August...	19,767,314	20,821,184	22,800,500
September...	19,349,756	21,372,528	22,837,250
October...	21,097,670	24,797,624	24,300,500
November...	23,849,673	28,658,695	27,248,160
December...	30,172,952	32,758,044	27,959,200
Total.....	\$284,720,094	\$302,050,000	\$313,498,840

Adjusted loss figures. \$254,959,423 \$265,591,231 (*)

NOTE. It may be noted that the final loss figures for both 1937 and 1938 are less than the preliminary loss figures for those years. It may be assumed, therefore, that the adjusted loss figure for 1939 will also be lower than the preliminary estimate.

* Released later in year.

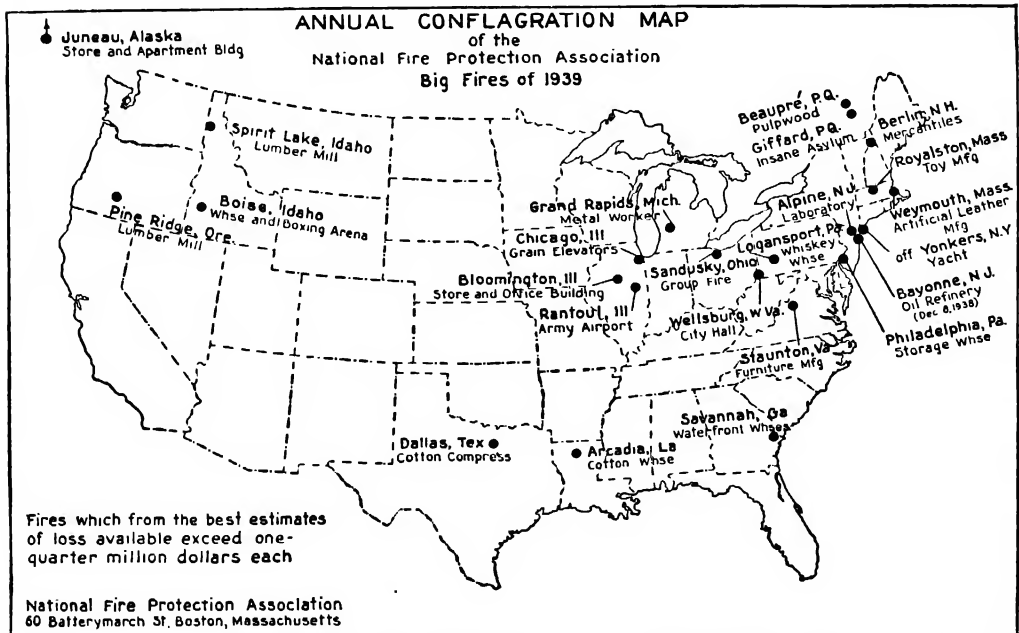
The 1939 fire loss brings the total fire waste in the United States during the past 24 years up to \$9,514,119,935, which is an annual average of about \$400,000,000. The following table gives the annual fire losses by years since 1916.

1916	\$258,377,952	1928.	\$464,607,102
1917.....	289,535,050	1929.....	459,445,778
1918.....	353,878,876	1930.....	501,980,624
1919.....	320,540,399	1931.....	451,643,866
1920.....	447,886,677	1932.....	406,885,959
1921.....	495,406,012	1933.....	271,453,189
1922.....	506,541,001	1934.....	271,197,296
1923.....	535,372,782	1935.....	235,263,401
1924.....	549,062,124	1936.....	266,659,449
1925.....	559,418,184	1937.....	254,959,423
1926.....	561,980,751	1938.....	265,591,231
1927.....	472,933,969	1939.....	(Est) 313,498,840

During the year 1939 there were 21 fires in the United States each involving a loss estimated at not less than \$250,000. Included is an oil refinery fire at Bayonne, N. J. which occurred Dec. 8, 1938, but which was reported to the Department of Fire Record too late for inclusion in the 1938 tabulation of large losses. This is a decrease of 15 fires over 1938 and is nine less than the average for the past five years. Two fires in this classification occurred in Canada during 1939 and one in Alaska. The locations of these 24 large loss fires are shown on the accompanying annual conflagration map. Of these fires, 10 resulted in a loss of more than \$500,000, including 3 which caused losses of \$1,000,000 or more. The largest loss of the year was the \$3,500,000 grain elevator conflagration at Chicago, Ill., May 11, 1939.

A total of 11 lives were lost in these fires, 50 less than were lost in the large loss fires of 1938.

Legislation. The Fire Marshal of Arkansas took action to put the N.F.P.A. regulations on liquefied petroleum gas into legal effect throughout the State. This is the seventh State to give these regulations the force of law.



The model fireworks law sponsored by the Fire Marshals Section of the N.F.P.A. was adopted virtually in its entirety by the States of Indiana, West Virginia, Pennsylvania, and Delaware. Utah and California have adopted similar laws though modified to permit certain types of fireworks to be sold to the public. These six States bring the total number which have taken steps to reduce the fireworks toll of life and property to 10.

North Carolina introduced a new method of dealing with the various problems of fire department outside and mutual aid. A State-wide volunteer department was created by law. As such local departments belonging to the State organization can fight fires in any part of the State without such questions as liability for damages which arise whenever fire departments go to fires outside the corporate limits of their own community.

STRAFFORD WENTWORTH.

FISH. See BIOLOGICAL SURVEY; FISHERIES, BUREAU OF; ZOOLOGY.

FISH CULTURE. See FERTILIZERS.

FISHERIES, BUREAU OF. The fisheries of the United States rank first in value among the fisheries of the world, and second in the number of pounds taken, being exceeded only by Japan in volume of yearly production. During recent years the national fishery resources of the United States have yielded annually over 4,000,000,000 pounds of fishery products, of which about 1,800,000,000 pounds are utilized as food. The remainder, exclusive of waste, provides raw materials for a score of industries manufacturing by-products annually valued at \$37,000,000. Commercial fisheries provide a direct source of employment for approximately a quarter of a million persons; recreational fisheries furnish healthful sport for another twelve million people. The conservation of the fisheries is, therefore, a matter of greatest concern.

An important step in the development of the United States Bureau of Fisheries occurred during 1939, when the Bureau was transferred to the Department of the Interior and was placed under the direction of Secretary of the Interior Harold L. Ickes. The transfer was made under the Reorganization Plan of President Roosevelt, and was in accordance with the centralization of Federal conservation activities within the Department of the Interior.

The Bureau of Fisheries, under the administration of Acting Commissioner Charles E. Jackson, is the conservation agency to which the States look for guidance and help in conserving and replenishing the supply of food fishes, and upon which the trade depends for information and assistance. Its primary functions are in the field of biology and fish culture, and in the promotion of the economic use of the catch from ponds, rivers, lakes, coastal indentures, and on the high seas.

Current research in the fisheries includes extensive studies of the biology of fish populations for such important commercial species as the haddock, mackerel, and flounders in New England; the shad and striped bass of the Atlantic Coast; the common shrimp of the Atlantic and Gulf Coasts; the California pilchard; the Pacific salmon and herring; and the important food fishes of the Great Lakes. Many of the uncertainties and economic hazards of the fishing industry are traceable to the great annual variations in the supply of marine fishes. These studies look to-

ward stabilization of yield, an important goal of modern fishery science. Investigations also in progress are designed to encourage oyster farming along the Atlantic Coast. In addition to these projects, the Bureau's staff of technologists is constantly inquiring into methods of converting fishery market wastes into industrial products.

Within the United States, each State makes and enforces its own fishery laws, the Bureau of Fisheries acting only in an advisory capacity. In the territorial waters of Alaska, however, the Federal Government has jurisdiction over the fisheries, including the fur-seal herd of the Pribilof Islands. See ALASKA.

The fur-seal herd of these islands, which is by far the largest in the world, is under protection afforded by the Convention of July 7, 1911, entered into by the United States, Great Britain, Japan, and Russia. Through careful management of the Bureau of Fisheries the herd has grown from 130,000 animals in 1911 to about 2,020,000 in 1939. The total yield of skins, taken only from 3-year-old males, in 1939 was 60,473, a 50-year record.

The Bureau operates 110 major fish hatcheries in various parts of the country and, during the fiscal year ended June 30, 1939, distributed to suitable waters 8,094,000,000 fish and eggs of 46 different species, of which the bulk were commercial, both fresh water and marine.

The fisheries catch in Alaska, exclusive of whales, during 1938, amounted to 793,948,400 lb., valued at \$12,040,000. Salmon was by far the most important species, yielding a total of 589,706,000 lb., valued at \$9,943,000. The herring industry was next in importance, with a production of 179,735,000 lb., valued at \$899,000. The halibut industry ranked third, producing 19,366,000 lb., valued at \$981,000. Of the remaining products, clam, whale, crab, and shrimp were most important in value.

The Atlantic Coast produced 1,543,534,800 lb. of fishery products in 1937, the most recent year for which complete statistics are available. More than one-third of this came from the New England section. Fisheries of the Gulf Coast produced 230,977,200 lb. of fish and shellfish. Landings of fishery products in the Pacific Coast States, amounting to 1,576,877,000 lb., were composed principally of 1,139,505,000 lb. of sardines or pilchards. Fresh-water fisheries of the Great Lakes and the Mississippi River produced 166,341,000 lb.

CHARLES E. JACKSON.

FISK UNIVERSITY. A coeducational institution for colored people in Nashville, Tennessee, founded in 1866. The total enrollment of 461 for the autumn of 1939 included 191 men and 270 women. The faculty numbered 59. The productive endowment for 1938-39 amounted \$2,609,548, and the total income, \$386,375. The library contained 67,265 volumes. The total enrollment of 188 for the summer of 1939 included 76 men and 112 women. President, Thomas Elsa Jones, Ph.D.

FITZGERALD, FRANK D(WIGHT). An American Governor, died at Grand Ledge, Mich., Mar. 16, 1939, where he was born, Jan. 27, 1885. Educated in the public schools and at Ferris Institute at Big Rapids, Mich., in 1906 he entered the postal service, serving until 1911. He became committee clerk in the Michigan senate in 1913 and thereafter spent practically all his life in the service of the State. He was proofreader of the House of Representatives in 1915 and bill clerk in 1917. During the War he served as Federal

Food Administrator of Michigan, and in 1919 was appointed Deputy Secretary of State.

Out of office in 1921, he became general manager of the Oldsmobile Distributing Corporation at Memphis, Mich., but two years later he returned as business manager of the Michigan State Highway Department. He served as Secretary of State during 1931-34, and in 1935 was elected Governor on the Republican ticket. Defeated by Frank Murphy in the elections of 1936, he became president of the Loan and Deposit State Bank, but in 1938 he accepted the Republican gubernatorial nomination and defeated Murphy on the labor issue.

Governor Fitzgerald was credited with having launched the Michigan civil service law.

FLAX. Flaxseed production in the United States in 1939 was estimated to total 20,330,000 bu. from 2,284,000 acres as compared with 8,152,000 bu. from 936,000 acres in 1938 and 70 per cent larger than the 1928-37 average production of 11,943,000 bu. Increased production in 1939 was attributed to a greatly expanded acreage in most producing States and above average acre yields, 8.9 bu. v. 8.7 in 1938. Leading flax States were Minnesota with 12,230,000 bu., North Dakota 2,055,000, California 1,728,000, and South Dakota with 1,296,000 bu. Flaxseed growing recently has become significant in Arizona, Idaho, Oregon, Texas, and Washington. The season average price per bushel received by farmers was \$1.552 and the value of production was estimated at \$31,548,000 in 1939 compared to \$1.591 and \$12,967,000 in 1938.

The 1939-40 seed crop in other leading producing countries was for Argentina 49,211,000 bu., India 17,798,000, Uruguay 5,149,000, and Canada 2,149,000 bu. World flaxseed production in 1939 excluding the U.S.S.R. and China was estimated at 104,812,000 bu. Flax fiber production in 1938-39, 15 countries reporting, totaled about 1,697,000,000 lb.

HENRY M. STEECE.

FLOOD CONTROL. Inasmuch as the year, unlike most of those of recent record, has been free from great and devastating floods, attention has turned to a more carefully considered study of flood flows. From an historic point of view, the work of the Miami Conservancy District in Ohio some twenty years ago has long been regarded as a classic. Messrs. Fuller and Hazen also introduced the statistical method in such studies about the same time. The latter method applies to the study of flood magnitudes and the frequency of occurrence of great floods—the probability method of analysis. Due to the relatively short period for which adequate flood records are available in the United States, and to the tremendously long periods which must often be anticipated in the design of flood control works, this method has been seriously questioned, not on the grounds of its mathematical development but as to its reliability under these conditions. Various other lines of attack on this problem have been suggested and attempts have been made to estimate maximum flood volumes by so-called rational methods of analysis of rainfall and of size, shape, slope, and character of the drainage areas involved. Water Supply Paper, No. 771 of the U.S. Geological Survey, "Floods in the United States: Magnitude and Frequency" issued in 1936, summarized these various methods and has furnished the basis for much discussion, particularly during the past year.

In the meantime the flood constructions of the Federal Government under the Corps of Engineers (q.v.) have gone forward while the basic question of Federal *vs.* State rights to water powers on navigable streams and the authority of Federal agents to condemn land for flood works still remains unsettled. It is held by the advocates of Federal control that any work on a navigable stream is subject to Federal action and control and that any power developed in connection with such works is Federal property. Acting under this theory, suit has been brought against the New England Power Co. hydro-electric plant at Bellows Falls, Vt., which took over rights formerly held by a company which maintained a canal and lock system at this point as an aid to navigation on the Connecticut River. The argument is particularly warm in New England, and Vermont has refused to surrender what she considers State rights to the Federal government. The outcome will be awaited with interest.

From the standpoint of constitutional law it would appear that those States which refuse to permit the Federal authorities to undertake flood works, and to take over power developments incidental thereto, are fighting a losing battle. There are so many types of work possible under the interpretation of the implied powers of the commerce clause of the constitution, which makes the improvement of navigation a Federal duty, that there appears to be no end to what can be undertaken by Federal agencies. Apparently, therefore, Federal flood control works will go forward, whether the States like it or not, and the only ultimate recourse of its opponents will be an aroused public opinion expressed through Congress.

JAMES K. FINCH.

FLOODS. In general, the floods which occur when natural streams of inland regions overflow their banks may be grouped into two classes. One is the local type over the land bordering a small stream, which is confined to a relatively small region; if the small region is not densely populated, little damage is done, but if it is thickly settled great damage may be caused by a local flood. The other is the flood over land bordering a large stream. Both classes of floods are caused by heavy rains (occasionally supplemented by melting snow). While there is no sharp line of demarcation between the two types of floods, it may be said that: (1) The average intensity of the rainfall over the drainage area which causes a local flood must be considerably greater than that causing a flood in a large stream, before much outside public interest is attracted to the local flood; (2) local floods are of short duration, while floods in large streams may last weeks or months; (3) in the present state of the meteorological and hydrological sciences it is impossible to predict the occurrence of local floods, while floods in large streams can usually be accurately predicted, and most governments maintain services for this purpose. A seacoast sometimes experiences a flood of a third class; such floods are not due to rains, but result from the so-called tidal waves caused by earthquakes or terrific windstorms.

Floods of both classes during the present year were unimportant compared to those occurring in an average year, though the loss of life was large. The accompanying table shows the total reported damage, and it is less than that for any year since 1934.

FLOOD LOSSES IN THE UNITED STATES IN 1939

Drainage ^a	Reported Losses ^b	Lives
St. Lawrence.....	\$ 11,100	0
Atlantic Slope.....	510,610	0
Gulf (except Mississippi).....	7,002,580	0
Mississippi (except Ohio).....	1,512,765	0
Ohio.....	2,210,941	79
Pacific Slope.....	12,950	0
Total.....	\$11,260,946	79

^a There were no losses reported in other Drainage Areas.

^b Probably about 75 per cent of actual.

Floods were exceptionally numerous in the United States east of the Rocky Mountains during February and March and were moderately numerous during April and May, but none of these floods reached high stages. The Ohio river was in flood during February and continuing into March, and again in April, but the stages reached were not high.

The first of these two Ohio river floods is notable for its long duration, especially in the lower reaches throughout the rainy weeks of February and March, and with memories of the great flood of 1937 still fresh in the minds of residents it caused great apprehension. In one way, however, this was of benefit, as people evacuated their homes, and removed property and livestock in ample time so that the flood damage was less in proportion to the stages reached than in most other Ohio floods.

The following table compares the duration of this flood with that of the great flood of 1937:

	1939 (days)	1937 (days)
Pittsburgh, Pa.....	1	10
Cincinnati, Ohio.....	5	19
Louisville, Ky.....	7	23
Evansville, Ind.....	48	41
Paducah, Ky.....	47	44
Cairo, Ill.....	50	50

The Ohio river flood of April was of relatively short duration.

There was a damaging flood in the Tombigbee river and its tributaries in Alabama in June. While stages were moderate, this flood, occurring as it did during the growing season, caused widespread damage. Approximately 200,000 acres were inundated, and the reported damage exceeded that for any other individual flood during the year. See ALABAMA.

A local but devastating flood occurred in eastern Kentucky in July. Very heavy rains resulting from thunderstorms during the night of July 4-5 flooded the towns of Farmers, Clearfield, Morehead, and Keck. The floods were nearly all confined to the creeks and small streams feeding the upper Licking and upper Kentucky Rivers. The topography of this section of the State is mountainous and with rains from 2½ to 9 inches in depth falling in times less than four hours, it is not surprising that the normally placid brooks and creeks became raging torrents causing much destruction to life and property. There were 79 persons drowned.

There was a serious flood in the Alabama River in August. At Selma the flood was within 2.1 feet of the highest of record. The reported damage, however, was not unusual for a flood reaching so great a height.

Most of the rivers were low at the end of 1939.

RICHMOND T. ZOCH.

FLORIDA. Area and Population. Area, 58,666 square miles; included (1930) water, 3805 square miles. Population: Apr. 1, 1930 (census), 1,468,211; July 1, 1937 (Federal estimate), 1,670,000; 1920 (census), 968,470. Jacksonville had (1930) 129,549 inhabitants; Miami, 110,637; Tampa, 101,161; Tallahassee, the capital, 10,700.

Agriculture. Florida harvested, in 1939, 1,597,100 acres of principal crops. Oranges totaled about 35,900,000 boxes (estimated farm value, \$33,615,000); grapefruit, approximately 17,100,000 boxes (\$13,959,000); corn, on 805,000 acres, 6,038,000 bu. (\$4,106,000); potatoes, 29,000 acres, 3,480,000 bu. (\$3,932,000); tobacco, 32,500 acres, 23,410,000 lb. (\$4,067,000); sugar cane (the part grown for sugar), on 21,000 acres, 736,000 tons (\$2,318,000); sweet potatoes, 19,000 acres, 1,140,000 bu. (\$912,000). The farm value of a variety of truck crops (annual growths for sale to canneries or the general market while fresh) approximated \$33,334,000 and formed one of the main sources of farmers' revenue.

Manufacturing. Florida's manufacturing establishments numbered, in 1937, 1835 (in 1935, 1889); they employed 52,005 wage-earners (in 1935, 51,412), and paid in wages \$36,501,359 (in 1935, \$30,961,300). The yearly manufactured product totaled \$217,044,982 for 1937 (for 1935, \$154,929,726); the part contributed to the total by manufacture in Florida was \$103,907,007 (in 1935, \$80,246,718). Lumber and timber products, exclusive of boxes, cooperage, etc., separately classified, attained for 1937 the total of \$29,860,617; cigars, of \$24,972,472; fruits and vegetables canned, dried, or made into preparations, \$16,220,558; fertilizers, \$14,391,737. Jacksonville, the leading source of manufactured products, attained an output of \$43,459,269 for 1937; Tampa, of \$37,170,082; Miami, \$16,532,430.

Mineral Production. Phosphate rock contributed nearly two-thirds of the total value, \$13,811,958, ascribed by the U.S. Bureau of Mines to all the native minerals that were produced in Florida in 1937.

The production of phosphate rock of all grades declined to 2,707,335 long tons for 1938, from 2,996,820 for 1937; by value, to \$8,773,680, from \$9,142,985. An inquiry made for a joint Congressional committee investigating reserves of unmined phosphate in the main producing States obtained estimates in 1938 increasing the computed supply in the State to 660,000,000 long tons of content of phosphorus in the three commercial types of rock, from the older estimate of 77,315,000 tons. Another 1,400,000,000 tons of phosphorus was reckoned to be situated in bedrock, not yet commercially used as a source.

Legislation. The regular biennial session of the Legislature opened April 4 and adjourned early in June. The members were under considerable pressure from constituencies to provide more money for public schools and other public activities without adding to the taxes. A committee had been appointed six weeks before the session, by the speaker-designate of the House, to study needs for appropriation and report thereon, but its labors brought little help. The Legislature passed, without provision for the corresponding revenue, measures adding about \$5,000,000 to biennial appropriations; in addition it repealed an existing tax of one-half of 1 per cent on gross receipts. Governor Cone, after the close of the session, vetoed both the deficit-making appropriations and the repeal of the tax on gross receipts,

thus putting the State back about where it had been before the Legislature went to work.

In other fields, the Legislators reduced a step-mother's lawful share in a decedent husband's estate to no more than that of each child by earlier marriage; defeated a proposal to give State pensions at \$200 a month to the elderly, on the Townsend plan; and allowed the demise, in a committee's hands, of a bill to require the numerous owners of cattle to fence them in and thus keep them off the automobile highways.

Political and Other Events. A decision of the U.S. Supreme Court, rendered in February, held that a charge of 15 cents per cwt. on cement imported into the State, while represented as an inspection fee, was in effect a tariff. The decision attracted attention outside of Florida, as the case resembled those of divers imposts laid by one State or another on goods coming from other parts of the Union and commonly known to compete with goods produced within the taxing State. Florida's system for regulating the charges in some kinds of trade within the State, by the agency of special boards, also was brought into the Federal courts; three dry-cleaners who had been put in jail for contempt of the State Supreme Court after refusal to comply with the minimum prices set by the State's laundry and dry-cleaning board carried their case in February to the U.S. Circuit Court; a fourth man was freed from jail by a Federal District Judge.

Dry weather in the early autumn helped the spread of costly fires in the drained lands of the Everglades, on which public bodies had spent an estimated \$11,000,000 to free them from water and make them fit for agriculture. The soil of these lands, largely peat, combustible when dry, caught from surface fires and burned deeply over areas judged to aggregate 200 square miles; the fertile top soil in some parts was wholly consumed; elsewhere it was diminished by the fire.

The estate of the late Alfred I. Du Pont completed (April 5) the payment of inheritance tax to Florida, remitting a check for \$2,927,339; previous payments had totaled \$3,635,791. The last payment extinguished a deficit of about \$2,000,000 in the State's operations for the fiscal year 1939.

New regulations for the marketing of citrus fruits, published by the Citrus Commission in August, were directed against the shipment of fruit too long before its maturity and of fruit lacking in juice or harmed by freezing weather.

In Miami, Mayor Robert R. Williams and two city commissioners, indicted in 1938 on a charge of soliciting a bribe from the Florida Light and Power Company as an inducement for them to settle a dispute over the company's rates out of court, were removed from office by a special election initiated by demand for their recall. A former Mayor, E. G. Sewell, was elected Mayor in Williams's place.

Officers. The chief officers of Florida, serving in 1939, were: Governor, Fred P. Cone (Dem.); Secretary of State, R. A. Gray; Attorney-General, George Couper Gibbs; Comptroller, J. M. Lee; Treasurer, W. V. Knott; Commissioner of Agriculture, Nathan Mayo; Superintendent of Public Instruction, Colin English.

FLORIDA, UNIVERSITY OF. A State institution of higher education for men, in Gainesville, Fla., established in 1853. In the fall of 1939 the registration totaled 3323; in the summer session of 1939 it was 2591. The faculty numbered 197. The endowment was \$262,000 and the expenditure for

instruction, research, administration, and operation was \$2,205,806. The library contained 141,975 volumes. The P. K. Yonge Laboratory School had an enrollment of 469 students, and the General College, a two-year general curriculum for all entering students, had an enrollment of 2021 students. Two new dormitories were added. President, John James Tigert, LL.D.

FLORIDA STATE COLLEGE FOR WOMEN. An institution for the higher education of women in Tallahassee, Fla., founded in 1905. The enrollment for the first semester of 1939 was 1970, with a faculty of 170 members. There were 1085 enrolled in the 1939 summer session. The income from State appropriations was \$537,500, and from other sources \$101,355. The library contains 72,645 volumes. During the summer and fall of 1939 construction was completed on four new buildings on the campus, viz.: New dormitory, Student Union Building, Infirmary, and Dining Hall. Edward Conradi, Ph.D., is President.

FOKKER, fōk'ēr, ANTHONY H(ERMAN) G(ERARD). A Dutch-American airplane designer and manufacturer, died in New York, Dec. 23, 1939. Born in Kediri, Java, Apr. 6, 1890, he was educated at Mainz Technical College. Of a mechanical turn of mind he early became interested in aviation and in 1909-10 experimented with gliders. In 1911 he built his first motor-driven airplane and became a pilot, and founded the Fokker Aeroplanbau G.m.b.H at Johannisthal in Germany. In 1913 he organized the Fokker Flugzeugwerke at Schwerin-Görries. During the World War, his German factories produced a large quantity of planes for the German air force and he invented the synchronized machine-gun propeller-mechanism which revolutionized air warfare.

After the War he fled to The Netherlands where in 1919 he organized N. V. Nederlandsche Vliegtuigenfabriek, at Amsterdam. In recent years this organization had supplied military aircraft, particularly for the Scandinavian countries. In 1922 Fokker came to the United States, where he sold to the U.S. Army Air Corps a transport, T-2, a single-engine type, in which was made the first nonstop flight across the American continent. In three years he sold over \$750,000 worth of aircraft to the United States forces. He established the Atlantic Aircraft Corporation for the manufacture of his airplanes and subsequently this became the Fokker Aircraft Corporation of America, a subsidiary of General Motors Corporation. In 1929-30 he retired as president of this organization.

In 1925 he introduced an innovation—a three-engined plane. Similar planes were used by Byrd and Bennett in their North Pole flight, by Byrd on his transatlantic crossing, and by Kingsford Smith in his transpacific and round the world flights. In late years Fokker held the European manufacturing rights to the Douglas and Lockheed air transports.

The holder of F.A.I. license No. 88, although he had not done any flying in recent years, he was the author of many technical articles and of his autobiography, *The Flying Dutchman* (1931).

FOOD AND DRUG ADMINISTRATION. Both the Food and Drugs Act of 1906 and the Food, Drug, and Cosmetic Act of 1938 governed the major activities of the Food and Drug Administration during the last fiscal year. Some of the most important public-health features of the new law, notably those dealing with

new or dangerous drugs or devices and with poisonous cosmetics went into effect immediately.

Quick action was directed against the dangerous eyelash dyes which had blinded or otherwise injured so many women; skin bleaches and freckle removers; a mole remover; lip sticks; and coal-tar hair dyes which failed to carry the required warning. All told, there were 85 seizures of poisonous cosmetics. Criminal prosecutions were instituted against the manufacturers involved.

No manufacturer may now launch a new drug in interstate commerce without first satisfying the Secretary of Agriculture that he has tested it sufficiently to know that it will not be injurious when used as the labeling directs. During the first year of enforcement, 1222 applications for new drugs were received, of which 680 were permitted to become effective. In one instance alone it was necessary to review more than 2000 case records, representing the experiences of about 100 physicians in administering the drug.

The 45 seizures of dangerous drugs during the year involved such potent ingredients as aminopyrine, cinchophen, neocinchophen, sulfanilamide, and desiccated thyroid.

For the first time dangerous therapeutic devices were subjected to regulation. Actions were taken against lead nipple shields, which had recently caused the death of at least one baby and the injury of others. As far as is known, the market has been cleared of them. Devices for spraying the nasal cavities were also seized.

During the year the Administration began work on many of the regulations required under the new law, such as the formulation of food standards and the certification of coal-tar colors.

There were fewer actions than usual against misbranded patent medicines, for the reason that they can be dealt with more adequately when the new law becomes fully effective in 1940. Then it will no longer be necessary to prove a fraudulent intent.

About the usual number of cases of food poisoning were investigated. The only proved cases of botulism were traced to under-processed home-canned foods; none to commercial packs. Airplane travel helped inspectors check Alaska salmon canneries more closely, and weather favored a pack free from spoilage. Only one criminal action was required. A campaign against lead in maple products resulted in fewer seizures than the previous year, while continued inspection of the crab-meat industry led to improvement in at least one district.

Fines totaling \$26,100 were imposed as a result of the prosecution of the manufacturer of Elixir Sulfanilamide—the largest sum levied against a single concern in the course of food and drug enforcement.

As usual the Administration carried out the provisions of the Insecticide Act, the Caustic Poison Act, the Import Milk and Filled Milk Acts, the Tea Act, and the Naval Stores Act.

WALTER G. CAMPBELL.

FOOD PRICES. See LIVING COSTS AND STANDARDS.

FOOD STAMP PLAN. See FEDERAL SURPLUS COMMODITIES CORPORATION.

FOOTBALL. See SPORTS.

FORD, FORD MADDOX. A British writer, died in Deauville, France, June 26, 1939. Born in Merton, England, in 1873, the son of Dr. Francis

Hueffer and the grandson of Ford Maddox Brown, he was educated in England, France, and Germany, and at the age of 19 published his first book, a fairy story, *The Brown Owl*. He wrote several other books and in 1900 became the editor of *The London Review*, in whose pages the work of many later famous authors first appeared. During 1897–1909 he acted as literary assistant to Joseph Conrad, and under their joint authorship were published *The Inheritors* (1901) and *Romance* (1903). In 1908, he launched *The English Review*, which had but a brief life, and after the War he edited *The Transatlantic Review*. A prolific writer, up to the time of the World War he had published some 30 books, including a *Life of Maddox Brown* and *Henry James: A Critical Study* (1914) and a novel, *The Good Soldier* (1915).

In 1919, Mr. Ford changed his name from Ford Maddox Hueffer to that of Ford Maddox Ford. Continuing his writing after the War, between 1924 and 1928 he issued a series of novels on England and the Great War: *Some Do Not* (1924), *No More Parades* (1925), *A Man Could Stand Up* (1927), and *The Last Post* (1928), his most celebrated works in this field. His biography of Conrad appeared in 1924, his autobiography, *Return to Yesterday* in 1931. In 1927 after a visit to the United States he published *New York Is Not America*. His last work was *The March of Literature* (1938), in which he described himself as "an old man mad about writing."

His works published after 1928 were *No Enemy* (1929), *The English Novel* (1930), *When the Wicked Man* (1932), *The Rash Act* (1922), *Towards Tomorrow* (1933), *It Was The Nightingale* (1934), *Vive le Roy* (1937), *Mightier than the Sword* (1938) and *Provence* (1938).

FORDHAM UNIVERSITY. A Roman Catholic Institution for higher education, under the Society of Jesus in New York City, founded as St. John's College in 1841. It is one of the largest Roman Catholic educational institutions in the country. The enrollment for 1939–40 was 7881, including 1630 in the School of Education and 833 in the Graduate School, and a distribution among the other colleges as follows: Law, 853; Fordham College (two divisions) 1671; School of Business, 589; Pharmacy, 137; Social Service, 348; Preparatory, 469. The registration for the Summer Session 1939 was 1502. Enrollment in the College of St. Andrew-on-Hudson, Poughkeepsie, N. Y., affiliated in 1936, is 42; admission to this department is limited to student-members of the Society of Jesus. There were 409 Faculty Members. The endowment fund totaled \$692,000. There were 185,000 volumes in the library. In June, 1939, St. Mary's Hall, a residence hall for Nuns attending Fordham University, was completed. It accommodates fifty student-nuns, with chapel, dining hall, recreation center, etc. and is located on the grounds of Mt. St. Ursula Academy, 198th Street and Marion Avenue, within six minutes' walk of the University. It is directed by the Ursuline Sisters for the University. President, the Rev. Robert I. Gannon, S.J.

FORD MOTOR CO. See NATIONAL LABOR RELATIONS BOARD.

FOREIGN EXCHANGE. For the par value of foreign currencies, see CURRENCIES, VALUE OF FOREIGN. For exchange rates during 1939 see INTERNATIONAL BANKING.

FOREIGN POLICY ASSOCIATION. An organization founded in 1918 with the object of

carrying on research and educational activities to aid in the understanding and constructive development of American foreign policy. The Association maintains a Research Department with a permanent staff of eleven experts, each covering a given field in international relations. A Department of Popular Education, set up in 1935, meets the demand of the general public for popular material on foreign affairs. Publications of the Association include a weekly *Bulletin*, semi-monthly *Foreign Policy Reports*, six *Headline Books* a year, four *World Affairs Pamphlets* a year, and discussion packets. Expenses are met by membership fees, sales of literature, and contributions; the budget for 1939 was \$175,000.

Monthly luncheons are held in New York City for the purpose of presenting to the public, through authoritative speakers, all sides of current international problems; attendance ranges from 700 to 1200. In addition, frequent small luncheons are given for experts. A series of afternoon lectures was held in the spring of 1939, and a luncheon series in the autumn to study more profoundly the background of international questions. The Association presents a weekly radio program over the Blue Network of N.B.C. on Sunday afternoons. At the outbreak of the European War, a special weekly radio program was devoted to an analysis of world events.

A Washington Bureau is maintained to establish contact with the State Department and other government officials and luncheon discussions are held in seventeen branch cities of the United States. A Latin-American Program, which was in preparation during 1939, will carry out on an experimental basis a number of projects toward better understanding of inter-American problems. Officers in 1939 included James G. McDonald, Honorary Chairman; Ralph S. Rounds, Chairman; Frank Ross McCoy, President; William T. Stone, Director of Popular Education and the Washington Bureau; Vera M. Dean, Director of the Research Department. Headquarters are at 8 West 40th Street, New York City.

FOREIGN RELATIONS. See UNITED STATES under *Foreign Affairs* and the various countries under *History*.

FORESTRY. As pointed out so effectively in the foreword of *Lumber Industry Facts, 1939*, published by the National Lumber Manufacturers' Association, the forests are America's greatest renewable natural resources and wood in its various uses and forms is the most versatile material of industry. The lumber industry, the oldest major American industry, is in a difficult transitional period with the great westward migration completed. The future depends on a better use of forest lands, greater knowledge of materials and their more efficient use. The part that private forestry must play in the constructive handling of the nation's forests is indicated in the 1939 Report of the Chief of the Forest Service, where it is stated that three-fourths of all the commercial forest land in the United States is privately owned. This land contains nearly three-fifths of the saw timber and furnishes more than 95 per cent of the timber now cut. Unfortunately most of the private land is not managed to yield continuous harvests of timber. Privately owned forests and problems facing the owners are major factors in the nation's forest situation. The forests do more than supply lumber and fuel. They assist in the control of floods, in preventing water and wind erosion and provide recreation to

millions of Americans. In one way or another the forests of America involve the welfare of every citizen whether he resides in the country or in the city.

Lumber Production. As estimated by the National Lumber Manufacturers' Association in its publication *National Lumber Trade Barometer* issued Jan. 8, 1940, lumber production for 1939 was 17 per cent above that of 1938. Final figures in board feet for the twelve months of 1938 and 1939 compiled by the above named association are as follows:

Month	1938	1939
January.....	1,436,700,000	1,782,200,000
February.....	1,418,600,000	1,637,400,000
March.....	1,820,700,000	1,922,700,000
April.....	1,663,800,000	1,968,300,000
May.....	1,759,200,000	2,234,900,000
June.....	1,820,000,000	2,251,600,000
July.....	1,821,400,000	2,143,400,000
August.....	2,151,300,000	2,400,800,000
September.....	2,159,800,000	2,303,100,000
October.....	2,062,900,000	2,362,500,000
November.....	1,820,700,000	2,250,300,000
December.....	1,711,100,000	2,001,800,000
Total for year	21,646,000,000	25,259,000,000

Lumber Trade. The export of American lumber has declined sharply in recent years, reaching in 1938, the lowest point in 40 years. Figures compiled by the U. S. Department of Commerce show an export of less than one billion board feet in 1938 as compared with over three billion feet in 1929. The greatest losses in trade have been with the Orient and with the British Empire markets. In the first instance the Sino-Japanese conflict is responsible for the decline and in the second, the British Empire preferential tariff system. Imports continued in 1939 to exceed greatly exports as shown in the following figures released by the Department of Commerce for the full year of 1939.

	Imports	Exports
Wood, unmanufactured.....	\$ 8,254,290	\$ 3,332,709
Wood, sawmill products.....	20,049,668	41,212,062
Wood, manufactures.....	12,348,150	14,341,014
Paper base stocks.....	88,409,149	8,599,960
Paper and manufactures.....	126,793,442	31,849,234
Totals.....	\$255,854,699	\$99,334,979

The great difference between exports and imports lies primarily in paper and paper base stocks, which provide newsprint, wrapping paper, paper for books and magazines and other uses.

Public Forests. There was a substantial increase in 1939 in the area of forest lands owned by the nation, by states, counties, and towns. According to the report of the Chief of the Forest Service, the net area of the National Forests included on June 30, 1939, a total of 175,843,405 acres either actually owned or in process of acquisition. This acreage may be divided into approximately 134 million acres of forest land and 41 million acres of grass, browse, and alpine country. From the National Forests there was sold stumpage equivalent to 1,842,342,000 board feet, cut under the general direction of the Forest Service. In addition the National Forests provided grazing for cattle and sheep and recreational facilities for millions of citizens.

Many of the national forests are located on the watersheds of important rivers and are highly important in flood control and in insuring water supplies to the valley communities.

State holdings are estimated at approximately 19 million acres with the larger proportion in the northern States. Community forests owned by cities, towns, and counties total three million acres.

New England Hurricane. With an estimated three billion feet of fallen timber resulting from the disastrous storm on Sept. 21, 1938, New England was faced in 1939 with the problem of salvage and of fire protection. On the instruction of President Roosevelt the Federal Forest Service set up the New England Forest Emergency Organization with headquarters in Boston. With the co-operation of the Works Progress Administration and the Civilian Conservation Corps highways were cleared and fire hazards reduced along heavily travelled roads. Through the agency of the Northeastern Timber Salvage Administration substantial loans were made on salvaged timber delivered at designated points where it could be conserved and protected from rapid deterioration. Roughly 95 per cent of the timber losses were in white pine stands. Fortunately an excellent seed crop was obtained from white pine in 1939, pointing toward the ultimate restoration of the forests.

Forest Protection. Due to long drought periods accompanied by excessively high temperatures, the far western States experienced a severe forest fire season in 1939. In a lightning-caused fire on the Toiyabe National Forest in central Nevada, five Civilian Conservation Corps enrollees lost their lives while attempting to control the conflagration. Altogether, the CCC has been a most important factor in fire control in the nation's forests, by building roads in difficult terrains, construction of dams to retain water, and in actual fire suppression. The extent of this service is discussed in the Report of the Chief of the Forest Service where it is pointed out that during its brief existence the CCC has constructed more than 42,777 miles of roads and trails in the national forests. In addition this group has built 1800 lookout structures and nearly 27,000 miles of telephone lines.

The white pine blister rust continued to be a major problem in northern Idaho, eastern Washington, and in the California-Oregon sugar pine region. Despite the fact that something over two million acres has been covered in the eradication of the alternate Ribes host, there remained a great acreage of susceptible pine timberland yet unscouted. Serious outbreaks of tree killing bark beetles occurred in Idaho, Montana, Colorado, Wyoming, and Utah.

New Books. Among interesting publications of the year were the following: Green, C. H., *Trees Of The South*, (Chapel Hill, N. C.); Guise, C. H., *The Management of Farm Woodlands*, (New York, N. Y.); Marquis, R. W., *Economics of Private Forestry*, (New York, N. Y.); Perry, J. & Slauson C., *Forestry and Lumbering*, (New York, N. Y.); Schenck, C. A., *Fremdländische Wald und Parkbäume*, 3 vols. (Berlin); Westveld, R. H., *Applied Silviculture in the United States*, (New York, N. Y.).

JOSEPH W. WELLINGTON.

FORMOSA (TAIWAN). An island off the southeast coast of China belonging to Japan. Area, 13,471 square miles, including the 12 islands called the Pescadores (Boko-to) with an area of 48 square miles. Population (1936 estimate) 5,451,863. The chief towns are: Taihoku, the capital (1935 population: 278,446); Tainan (1935: 111,959); Keelung (1935: 84,978); Takao

(1935: 83,735); Kagi (1935: 72,984); Taichu (1935: 70,467). On Apr. 30, 1937, the 1115 schools of all kinds had a total of 527,955 students.

Production and Trade. Production of chief crops, in 1938, in metric tons, was: Wheat, 600; barley, 500; maize, 1900; tobacco, 2600; tea (1936), 10,800; sesame, 1300; soybeans (1937), 4300; groundnuts, 57,800; jute (1936), 9000. In 1938-39 the estimated production of rice was 1,822,000 metric tons; sugar cane, 1,461,000 metric tons. Mineral production, in metric tons, was: Coal, 1,744,000 (1936); salt, 210,000 (1937); copper ore, 4000 (1936 estimate); silver, 6200 (1934); superphosphates of lime, 23,000 (1936). In 1937 it was estimated that 3500 kilograms of gold were produced. Livestock (Dec. 31, 1937): Buffaloes, 282,101; pigs, 1,849,195; cattle, 76,341; goats, 70,384; horses, 924. In 1938 the estimated value of general imports totaled Y366,700,000; exports, Y456,400,000.

Communications. There were, in 1939, some 11,000 miles of roads and almost all of them were surfaced with gravel. In 1936, 3701 vessels (8,858,524 tons) entered Formosan ports from Japan and other countries. Daily air service to Japan Proper was inaugurated on Apr. 1, 1938.

Government. The budget for 1938-39 was estimated to balance at Y183,014,971 (yen averaged \$0.2845 in 1938). The government is administered by a Japanese governor-general (Seizo Kobayashi). See JAPAN under *History*.

FORT PECK DAM. See MONTANA.

FOUNDATIONS. Apparently no important pneumatic work was undertaken during the year but there was an interesting and continued development in the use of steel sheet pile cofferdams. Among the most unusual procedures of this type were the foundations for the bridge over the Missouri River at Brownsville, Neb. (see BRIDGES). Steel I-beams were riveted to the interlocking steel piling to stiffen the piling and permit driving 65 feet to bedrock. In this way two circular caissons, 21 ft. in diameter were formed. These caissons were not, as is usual, completely excavated. They were cleaned out to about half their depth and the upper portion was filled with concrete thus forming a solid pier and plug over the enclosed sand cylinder. As the piers are 135 ft. in total height this was a substantial saving and it was estimated that the cost was less by 18 per cent than would have been the case had the pneumatic process been used.

Another most unusual work was undertaken for the Potomac River Bridge at Ludlow Ferry, Md. Here four circular caissons were joined together to form a four-legged pier about 60 ft. high. The entire form was built in steel and, after sinking to position, both caissons and cross-walls were filled with tremie concrete. Each of the four circular caissons were flanged outward at the bottom (32 ft. in diameter reducing to 10 ft. above) thus forming a spread type base. A timber platform was prepared 56 ft. below water level on which the caisson rested. Each base fitted over a series of steel H-piles driven through holes in the timber platform. This work required particular care in sinking the caissons in the exact planned position.

Unusual caissons were also used for the Lion's Gate Bridge at Vancouver, a suspension span which was placed in service late in 1938. The two main piers (span 1550 ft.) were constructed by totally different methods, although both were so designed that pneumatic methods could be used, if found necessary, in effecting the last stages of the

sinking. In the south pier, formed of two 48-ft. diameter caissons, the rock (sandstone) was leveled off about 38 ft. below high water, and the caisson was successfully sealed to the rock surface by using tremie concrete deposited around the outside edge. It was found possible to excavate the remaining few feet of rock in the dry. A cellular, reinforced-concrete caisson 68 by 117 ft. was used for the north pier and was sunk by open dredging with orange-peel buckets. Considerable difficulty was encountered in keeping the caisson in proper position and cracks developed in the early stages of the work, but it was finally sunk by the use of dynamite under the cutting edges.

The Narragansett Bay Bridge at Jamestown, R. I., also involved a large scale cofferdam undertaking. Some 68 foundations were required, of which 29 were circular steel sheet pile cofferdams in water 12 to 70 ft. in depth.

JAMES K. FINCH.

FOURSQUARE GOSPEL, INTERNATIONAL CHURCH OF THE. See RELIGIOUS ORGANIZATIONS.

FRANCE. Area and Population. The area is 212,722 square miles. The population was estimated at 41,980,000 on June 30, 1938, as compared with 41,905,962 (domiciled) at the 1936 census. Foreigners resident in France in 1936 numbered 2,453,507 (including Italians, 887,732; Poles, 463,143; Spaniards, 410,183). Live births in 1938 numbered 612,138 (14.6 per 1000); deaths, 646,879 (15.4 per 1000); marriages, 273,903 (6.5 per 1000). Populations of the chief cities at the 1936 census were: Paris proper, 2,829,746; Marseille, 914,232; Lyon, 570,622; Bordeaux, 258,348; Nice, 241,916; Toulouse, 213,220; Lille, 200,575; Nantes, 195,185; Strasbourg, 193,119; Saint-Etienne, 190,236; Le Havre, 164,083; Toulon, 150,310; Rouen, 122,832; Nancy, 121,310; Reims, 116,687; Roubaix, 107,105; Clermont-Ferrand, 101,128.

Colonial Empire. The French colonies, dependencies, protectorates, and mandated territories occupy an area of about 45,000,000 square miles and had an estimated population of 70,000,000 in 1938. They are treated separately in the YEAR BOOK under the following individual headings:

In *Africa*: ALGERIA; CAMEROON, FRENCH; FRENCH EQUATORIAL AFRICA; FRENCH WEST AFRICA; MADAGASCAR; MOROCCO; RÉUNION; SOMALILAND; TOGO and TUNISIA.

In *America*: FRENCH GUIANA; GUADELOUPE; MARTINIQUE and ST. PIERRE and MIQUELON.

In *Asia*: FRENCH INDIA; FRENCH INDO-CHINA; SYRIA and LEBANON.

In *Oceania*: NEW CALEDONIA and DEPENDENCIES; NEW HEBRIDES; OCEANIA, FRENCH ESTABLISHMENTS IN.

National Defense. See EUROPEAN WAR; MILITARY PROGRESS; NAVAL PROGRESS.

Religion and Education. With the exception of about 1,000,000 Protestants and a few thousand Jews, the French people profess the Roman Catholic faith. At the 1931 census there were 2,286,273 persons of five years or over (7 per cent of the total) unable to read or write. The school enrollment was: Elementary (Dec. 31, 1936), 5,332,123; secondary (1937-38), 269,422; higher public instruction (July 31, 1936), 73,852.

Agriculture. About 38 per cent of the working population is directly supported by agriculture, 31 per cent by industry and 11.5 per cent by commerce. There were 50,168,000 acres of arable land (36.84 per cent of the total) in 1937. Yields of the chief crops in 1938 in bushels, except where other-

wise indicated, were: Wheat, 372,864,000; rye, 31,933,000; barley, 59,286,000; oats, 375,986,000; corn, 22,779,000; potatoes, 636,189,000; sugar beets, 7,985,000 metric tons; beet sugar, 836,000 metric tons; wine, 1,676,953,000 gal.; olives, 110,230,000 lb.; olive oil, 2,614,000 gal.; hay, sown, 9,319,000 metric tons; fodder beets, 34,492,000 metric tons. Livestock statistics for 1938 showed 15,622,000 cattle; 7,127,000 swine; 9,872,000 sheep; 1,416,000 goats; 3,012,000 horses, mules, and asses.

Mining and Manufacturing. Mineral and metallurgical production in 1938 was, in metric tons: Coal and lignite, 47,557,000; iron, 10,100,000; iron pyrites, 147,000; potash (K₂O content), 582,000; bauxite, 682,400; pig iron, 6,049,000; steel ingots and castings, 6,174,000. The output of electric power in 1938 was 13,482,732,000 kilowatt-hours. Silk production (1938) was 47 metric tons; rayon, 28,000 metric tons; alcohol (1937), 109,701,000 gal.; vessels launched, 47,700 gross tons (1938). The chief manufacturing lines (1937) in order of the number of workers employed were metal-working and machinery, textiles and textile working, foodstuffs, and wood working.

Foreign Trade. Merchandise imports for consumption and exports of French products in 1936-38 and 1929 are shown in the accompanying table. The increase shown in the franc value of trade reflects successive declines in the foreign exchange value of the franc since September, 1936.

FRENCH FOREIGN TRADE

Year	Imports		Exports	
	Million francs	Million dollars*	Million francs	Million dollars*
1938	45,981	1,322	30,586	881
1937	42,316	1,683	23,935	952
1936	25,414	1,521	15,492	927
1929	58,221	2,282	50,139	1,965

* Conversions to dollars made at average yearly exchange rates.

The distribution of French trade by leading countries in 1937 and 1938 is shown in the accompanying table.

FRENCH TRADE BY COUNTRIES, 1937 AND 1938
(Millions of francs)

Country	Imports		Exports	
	1937	1938	1937	1938
Germany	3,247	3,116	1,415	1,850
United States	4,000	5,235	1,535	1,631
United Kingdom	3,380	3,238	2,721	3,552
Belgium	3,057	3,159	3,145	4,182
Switzerland	813	987	1,446	1,985

Of the 1938 imports, foodstuffs and beverages accounted for 27.2 per cent; raw materials and semi-manufactures, 58.2; and manufactured articles, 14.6; of the exports, the classifications named above took 14.4 per cent, 32.2 per cent and 53.4 per cent respectively.

Finance. Government receipts and expenditures for the calendar years 1936 through 1939 are shown in the table on p. 287.

By June, 1939, 12,000,000,000 francs in supplementary credits had been voted over and above the budget estimates for the calendar year 1939. Actual revenue from "normal and permanent sources" in 1938, in millions of francs, as reported in the Journal Officiel in March, 1939, was as follows: Direct taxes, 9248 (2434 more than in 1937, but 119 under revised budget estimates); indirect taxes and monopolies, 37,715 (7019 above 1937 returns, but 475 under budget estimates); public domain, 498 (169 over 1937 returns but 9 under budget estimates); other receipts, 4243 (341 over

1937 returns). The 1940 civil budget estimated receipts at 79,961,183,112 francs and expenditures at 79,889,137,098 francs. The preliminary military budget for 1940 placed expenditures at 249,000,000,000 francs.

FRENCH BUDGETS, 1936-39
[In millions of francs]

Year	Revenues	Expenditures		Deficit
		General	Capital	
1936 (actual)	38,893	46,450	9,339	16,696
1937:				
Voted	43,482	48,071	16,026	20,615
Est., June, 1939 . . .	44,218	50,039	15,600	21,421
1938:				
Voted	54,776	54,739	14,219	14,182
Est., June, 1939 . . .	53,900	63,422	23,789	33,311
1939:				
Voted	66,388	66,565	28,035	28,212

The total public debt on Jan. 1, 1939, was 549,801,000,000 francs, of which 386,235,000,000 was internal. The central monetary gold reserves (in old U.S. gold dollars) totaled 1,600,000,000 francs on Sept. 30, 1939. The average exchange value of the franc was \$0.0405 in 1937, \$0.0288 in 1938, and \$0.0251 in 1939. On Nov. 13, 1938, the gold stock of the Bank of France was revalued and the gold content of the franc fixed at 27.5 milligrams of gold ⁹⁰⁰/₁₀₀₀ths fine. The franc was relatively stable thereafter until September, 1939.

Transportation. The railway network comprised seven large systems in 1938 with a total mileage of 26,427. Operating receipts of the consolidated railway services were 15,565,000,000 francs in 1938; operating expenses, 17,728,000,000; deficit, 2,163,000,000. Highways and roads aggregated 393,761 miles in 1939 (see **ROADS AND STREETS**). The water-borne internal traffic (1938) was 45,006,000 metric tons. Air France, the principal air line, with multitudinous routes, carried 91,225 paid and 13,199 free passengers and 2039 tons of mail and freight (1938). Total operating mileage of Air France was 40,563 in August, 1939. In 1938, 24,595 vessels of 51,991,071 net register tons entered French ports in the foreign trade. The leading ports in point of freight were Marseille, Le Havre, Cherbourg, Dunkirk, Rouen, Boulogne, and Bordeaux. The French merchant marine (June 30, 1938) consisted of 2,903,600 gross tons. Tonnage launched in 1938 was 47,300.

Government. The Constitution of 1875 vests executive power in the President, acting through a ministry selected by him but responsible to Parliament. Legislative power rests in the Chamber of Deputies and the Senate, the members of which jointly elect the President for seven years. The Senate has an authorized membership of 314, all 40 years or more of age and chosen by an electoral college for terms of nine years. The Chamber has an authorized membership of 618, elected by direct manhood suffrage for four years. President, Albert Lebrun (re-elected Apr. 5, 1939).

Leading members of the cabinet appointed Apr. 4, 1938, were: Premier and Minister of National Defense, Edouard Daladier; Vice-President of Council of Ministers and Minister of Co-ordination of Services of the Premier's Office, Camille Chautemps; Foreign Affairs, Georges Bonnet; Finance, Paul Reynaud; National Economy, Raymond Patenôtre; Justice, Paul Marchandau; Interior, Albert Sarraut; Military Marine, César Campinchi; Air, Guy La Chambre. For changes in 1939, see *History*.

HISTORY

For the second time within a generation France on Sept. 3, 1939, entered upon a life and death struggle with a powerful and aggressive Germany (see **EUROPEAN WAR**). The nation took up arms with virtual unanimity, with calm determination and with confidence. That they were able to do so was due primarily to the unspectacular but firm leadership of Premier Daladier. In 1938 his government had succeeded in halting the destructive cycle of economic and financial convulsions, labor disputes, political and social conflicts and cabinet overturns that had weakened France internally and forced her to follow a vacillating policy in the face of German and Italian threats and aggressions (see 1938 **YEAR BOOK**, p. 264 f.). In 1939 Daladier's Government instilled new life in the French economic system, rehabilitated its finances, mobilized the country morally and economically to meet the growing danger from across the Rhine.

Internal Politics. To meet the threat posed by the totalitarian dictatorships, the French people voluntarily consented to the increasing concentration of power in the hands of the cabinet. Subject to Parliament's veto, Daladier by the end of 1939 was exercising powers commonly associated with dictatorship.

In each instance, the extension of the Premier's authority resulted from a deepening of the European crisis. After the German occupation of Bohemia and Moravia on March 15, he obtained from Parliament on March 19 full power to rule by decree until November 30. The Chamber of Deputies approved his request by a majority of only 57 after bitter opposition from Communists, Socialists, and a few of Daladier's own Radical Socialists. The Senate readily consented, 286 to 17. During the debate on this issue Daladier declared that he had "one sole purpose, and that is to increase the strength of France, so that she may be in a position to save all the nations who want peace and liberty."

Re-election of Lebrun. The strength of the opposition to Daladier's rule was indicated by the battle that developed over the Presidential election of April 5. Daladier and his supporters sought President Lebrun's re-election by an overwhelming majority as a symbol of French unity against the Reich. But Lebrun received only 506 of the 907 votes cast by the combined Chamber and Senate, the remainder being distributed among a number of personages affiliated mainly with the Left parties, such as Ferdinand Buisson, Edouard Herriot, Marcel Cachin (Communist) and Albert Bedouce (Socialist). M. Lebrun was inaugurated for his second term on May 10.

Elections Postponed. On June 27 Premier Daladier, warning of the impending German-Polish crisis, read a Presidential decree suspending Parliamentary sessions for the rest of the summer. The Chamber approved the decision to end the session, 350 to 231, after the Premier stated that his government would maintain constant contact with parliamentary commissions, and would reconvene Parliament if events demanded it.

With the German-Polish crisis becoming steadily more ominous, the Cabinet on July 29 approved the Premier's decision to suspend the 1940 parliamentary elections and extend the life of the existing Parliament for two years. Following the outbreak of war, Daladier on September 13 announced a reorganization of his cabinet. He took over the duties of Foreign Minister from Georges Bonnet, whose administration of that office had aroused

widespread criticism. Bonnet became Minister of Justice and Georges Pernot was named to the new post of Minister of Blockade. Other appointments were: Minister of Education, Yvon Delbos; Former Combatants and Pensions, René Besse; Mercantile Marine, Alphonse Rio; Armaments, Raoul Dautry. The political complexion of the ministry was little altered by these changes. On November 1 Vice Premier Chautemps assumed the additional post of Minister of Refugees, with responsibility for the care of a million women, children, and aged or infirm men moved from danger zones near the German frontier and from Paris.

Parliament Reconvened. On October 5 formal adjournment of Parliament was decreed although the parliamentary committees remained at work. However Parliament was recalled on November 30, and presented with a bill for the extension of the Cabinet's decree powers—due to expire at midnight—for the duration of the war. A majority of the Deputies and Senators willingly ratified the measures taken by the government. But they balked at abdicating their functions for the balance of the war. After a 12-hour debate a compromise solution was approved, 318 to 175, extending Daladier's decree powers but providing that each decree must be submitted within one month for the approval of Parliament if it was in session.

No complaint was offered as to Daladier's conduct of the war, and the Premier received a stirring tribute from virtually all parties for his leadership, but the consensus of Deputies and Senators was that they owed it to their constituents and to France to advise and support the executive arm in the prosecution of hostilities. This support was evidenced during December by the unexampled speed and unanimity with which Parliament passed the 1940 civil budget and a stupendous war budget. See *Finance* above.

Daladier's Internal Program. Under the decree powers obtained on March 19, the Daladier Government carried into effect a series of political, economic, and military measures designed to mobilize the nation's moral and material resources for the struggle with the Reich.

Economic Measures. In the latter part of March decrees were issued speeding up the production of defense industries. The 40-hour week, which had been progressively modified since the Popular Front reforms of 1936, gave way to a 60-hour maximum in all basic industries, although the 45-hour-week was retained in most industries. Rates of overtime pay were severely slashed. Skilled laborers were required to work wherever the government needed them, unemployment relief being denied those who refused such jobs. Civil expenditures were reduced. On April 1 a series of new taxes were imposed to finance defense measures and to make other classes besides labor bear their share of the sacrifices needed to make France strong. Armament profits were taxed between 50 and 80 per cent in addition to normal taxation.

In May Finance Minister Reynaud carried through various Treasury operations that strengthened the Government's financial position. During the first half of September a series of decrees placed the economic system on a war basis. The government assumed complete control over foreign trade, foreign exchange transactions, and the power of requisition over capital, industry, and labor. As the weeks passed without the expected German offensive, large numbers of troops were demobilized to provide labor for the farms and for rapidly expanding war industries.

As a result of skillful use of the economic war powers assumed by the government in September, the improvement in government finances, production, and general business continued throughout the remainder of the year. Gold holdings of the stabilization fund continued to increase. The stock market remained firm. A low short-term interest rate was maintained. The repatriation of French capital that had sought refuge abroad in previous years amounted to 14 billion francs from September 3 to December 13.

Political Decrees. The Daladier Government exercised its decree powers no less vigorously in the political field. A decree of April 16 made foreigners without nationality or those benefiting from sanctuary in France subject to military conscription. Foreign associations and clubs were subjected to state control on April 18, and a week later three pro-German, separatist groups in Alsace-Lorraine were ordered dissolved. Organizations or individuals in France were forbidden to accept foreign funds for propaganda purposes, and drastic penalties were imposed on the dissemination of anti-Semitic propaganda. Emanating particularly from Nazi and Fascist groups in France, this campaign was stirring up racial prejudice and tending to weaken national unity. The government on May 6 established a censorship over foreign newspapers and periodicals entering French territory. On June 24 the circulation of bulletins, tracts, and leaflets of foreign origin was prohibited.

The government on June 9 announced its decision to end the corruption and mismanagement of the municipal affairs in Marseille by placing the city under the supervision of the state. Decrees designed to check the decline in the French birth rate were issued July 29. At the same time counter-espionage and the French propaganda services abroad were augmented. A drastic new code for checking espionage, providing the death penalty for 10 separate offenses, was issued July 30, following discovery of German spy rings with wide ramifications extending into French officialdom. On the eve of war, the government on August 28 established a tight censorship of the press, radio, moving pictures, and telephonic and telegraphic communications.

Later drastic measures were taken against the autonomist movements in Brittany and Alsace. The Breton Nationalist party, which had agitated for peace, was banned on October 21, and its leader, Francis Joseph de Beauvais, was sentenced to five years in prison on December 20. Three separatist groups in Alsace-Lorraine were ordered to dissolve (October 29). Two Alsatian autonomist deputies were arrested for "a plot against the safety of the State" on October 9 and on October 26 Dr. Karl Roos, the Alsatian autonomist leader, was sentenced to death by a military court for "delivering important military secrets to German espionage agents."

Communist Party Banned. The most drastic move made by Premier Daladier under his decree powers was the suppression of the Communist party on September 26. The party had played a leading role in the organization and legislation of successive Popular Front governments in France. In the 1936 elections it polled nearly 1,500,000 votes and elected more than 70 Deputies and 2 Senators. It had established control over several hundred local municipal governments.

The decline of the party's fortunes began on May 29 when the Socialist party's national convention voted to dissolve the working agreement

with the Communists that had been formed in 1934. The attitude of Moscow during the 1939 negotiations for a mutual assistance pact with France hurt the prestige of the French Communist party, and it received a crushing blow when the Soviet Union on August 24 signed its non-aggression pact with the Reich. Many French Communists deserted the party, but the leaders and perhaps a majority of members placed responsibility for the Nazi-Soviet pact upon the French and British Governments. Thereafter they abandoned their policy calling for firm French resistance to Nazi aggression and demanded that France conclude peace on the terms suggested by the German and Soviet Governments.

Daladier meanwhile had seized the opportunity to break the Communists' power. On August 25 the Communist newspapers *L'Humanité* and *Ce Soir* were confiscated and Communist headquarters in Paris were raided; on August 27 the two newspapers were suspended indefinitely. The Soviet invasion of Poland on September 17 aroused further anger in France and enabled Daladier to dissolve the Communist party and prohibit the publication or circulation of Communist propaganda. The move was approved by the French Socialists as well as by extreme Rightists.

Thereafter the government proceeded to purge Communists from Parliament and from all public offices. Communist-dominated municipal councils were taken over by commissions. Forty-three Communist Deputies, who formed a Workers and Peasants party after dissolution of their movement, were arrested. Warrants were issued for the arrest of Maurice Thorez and other Communist leaders, who escaped the police dragnet, on army desertion charges. Three of the arrested Communist Deputies were freed on October 25 when they repudiated a letter written by their fugitive leaders favoring acceptance of Hitler's peace terms. The remainder refused to recant and were ordered held in prison indefinitely. The drive on Communists was continued throughout the year, and extended to pacifists and others who adopted a defeatist attitude toward the war.

Military Measures. Under its newly won decree powers, the government late in March assumed power to call up reservists without parliamentary approval and to increase the size of the professional army. Some 200,000 special fortress troops were called up for service in the Maginot Line. Thereafter the number of men under arms was gradually increased and effective measures taken on all fronts to enable France to withstand the expected shock of a military invasion accompanied by devastating air raids. All French land, sea, and air forces were unified under the command of Gen. Marie Gustave Gamelin on June 6. Successful efforts were made to speed up production of military planes, and large orders for additional planes were placed in the United States. Air raid shelters were constructed in Paris and other exposed centers. When the crisis reached its climax with the German invasion of Poland the evacuation of children and other non-combatants from frontier districts and Paris was carried out efficiently and smoothly.

While France's expertly-led, well-trained army stood guard on the Maginot Line, the government concentrated all its efforts upon the development of war industries and the more effective co-ordination of the nation's human and material resources to withstand the coming test. Late in December Premier Daladier announced that 950,000 workers

were engaged in making arms, munitions and supplies for the French armed forces. The army itself was busily engaged in extending and strengthening the frontier fortifications, which were extended along the entire Belgian frontier to the English Channel before the end of 1939. The government took severe measures to end defeatism and shirking. The last months of the year found the nation hard at work and more united than ever in its determination to see the war through to victory. Life in Paris and in most other cities had returned almost to normal, but over the entire nation hung the constant threat of mass German air raids and of a sudden powerful assault upon the Maginot Line.

Foreign Relations. The international position of France at the beginning of 1939 was full of danger. Daladier's repudiation of the Czech alliance in September, 1938, dealt the final blow to the chain of French alliances that had served to curb Germany's expansive energy. Italy, working in close collaboration with the Reich, was openly threatening France's possessions and power in North Africa and the Mediterranean. The impending triumph of General Franco's insurrection in Spain, based upon German and Italian military aid, threatened to draw Spain into an alliance with the Fascist powers, and thus expose France to danger of assault on three separate frontiers.

Meanwhile Japan was expanding steadily southward in the Far East, endangering the French hold on Indo-China. Against these adverse circumstances, France could balance only her increasingly close military and political co-operation with Great Britain. However Hitler's rapprochement with Communist Russia in August and Anglo-French diplomacy and economic power succeeded in separating Italy and Spain from Germany, at least temporarily. This enabled France during the first phase of the European War to concentrate the bulk of her armed might on the German frontier.

Relations with Italy. In December of 1938 Italy's repudiation of the Mussolini-Laval agreement of 1935 and Italian territorial demands upon France had brought relations between the two countries near the breaking point (see 1938 YEAR BOOK, p. 267). During the first week of January, 1939, Premier Daladier visited Corsica, Tunisia, and Algeria to inspect military preparations and defenses against a possible Italo-German attack. Everywhere he received a warm welcome from Arabs and French alike. He returned to Paris on January 8, declaring that "all our colonies want union with France, and we must give them an example by working methodically."

To the growing Italian pressure, Premier Daladier offered firm opposition. Reports that Italy was concentrating troops in Libya along the Tunisian frontier were answered by France's reoccupation on February 18 of a strategically-placed strip of coastal territory between French Somaliland and Italian Eritrea that had been ceded to Italy by France under the now invalid 1935 agreement. On March 25 Mussolini for the first time officially formulated Italian territorial demands upon France by stating that they "have a name. They are called Tunisia, Djibouti and the Suez Canal." Daladier replied on March 29 that France "would not refuse to examine propositions that may be made to her" in the spirit of the 1935 accord, but declared: "We will not cede a foot of our land nor one of our rights."

Mussolini, not being prepared to carry his

threats to the point of war, was forced to postpone his claims upon France. But his rape of Albania, a predominantly Moslem state, in April made the task of wresting Tunisia from France all the harder. It aroused deep anger among Moslem chiefs and religious leaders throughout French North Africa, and strengthened their loyalty to France. Further defiance of Italy was expressed on June 7 when the directors of the Suez Canal Company, meeting in Paris, temporarily rejected Italian demands for a voice in the canal's management.

The outbreak of the European War in September, and Italy's non-intervention policy, placed Mussolini in a far better bargaining position with respect to France. Negotiations for the satisfaction of Italy's demands continued throughout the year with no outward evidence of reaching a conclusion satisfactory to both sides. The Italian press periodically threatened to take by force what France was not prepared to yield voluntarily, but the danger of a Franco-Italian conflict did not appear as near at the end of 1939 as at the beginning of the year. In anticipation of a possible colonial conflict, the French Government in October announced a series of reforms extending greater autonomy to the colonies, which had rallied to the French cause against Germany no less effectively than in 1914.

France and Spain. Simultaneously with the negotiations with Italy, France successfully carried through the crucially important task of preventing Italy and Germany from capitalizing on their interventions in Spain. When the year opened, with Franco's Catalanian offensive making rapid headway, Daladier rejected demands from both the Left and even some Rightist spokesmen in Parliament that his government lend aid to the hard-pressed Loyalists in order to prevent the threatened Fascist encirclement of France. Instead he gambled on the chance that Spain's exhaustion, combined with Anglo-French diplomatic and military pressure, could prevent Spain's participation in an Italo-German alliance. The success of his policy was evidenced when General Franco declared Spain's strict neutrality in the Anglo-French-German war. Negotiations for the resumption of commercial relations between France and Spain were approaching a successful conclusion at the end of 1939. See *SPAIN* under *History*.

The problem of the 500,000 Loyalist refugees who fled into France before Franco's advancing armies in the spring remained to plague the Daladier Government. Large sums were required to provide them with elementary necessities in the camps in which they were assembled. Many of the refugees returned to Spain after the civil war ended, but about 130,000 remained in France at the end of 1939 as against only 20,000 who had found their way to other countries.

Co-operation with Britain. The effectiveness of Anglo-French diplomatic and military co-operation was demonstrated early in 1939 during the crisis in French relations with Italy and Spain. This collaboration was steadily extended during the remainder of the year. Toward the end of March President Lebrun, accompanied by Foreign Minister Bonnet, paid a state visit to London to return the visit of the British sovereigns to Paris in 1938. Discussions held during the visit tightened the Anglo-French military alliance. Thereafter France followed the British lead in scrapping the policy of appeasing Hitler and establishing a "stop-Hitler" front.

Through British initiative, the French alliance with Poland was reconstituted. France joined Brit-

ain in guaranteeing the independence of Greece, Rumania and Turkey. On June 23 France concluded a military accord with Turkey which provided for cession of the Sanjak of Alexandretta (Hatay Republic) to the Turks. This further alienated the Syrian nationalists in the French Near Eastern mandated territories, but led to the Anglo-French-Turkish military alliance of October 19, which greatly strengthened the French military position in the eastern Mediterranean. Beginning in September, France assembled large armed forces in Syria and their commander, General Weygand, prepared in collaboration with the Turkish army and British forces in Palestine and Egypt to meet a possible German or Soviet drive into the Balkans or the Near East.

With the declaration of war against Germany, France and Britain proceeded to extend their joint action in the economic and military fields. A Supreme War Council was established to unify their military activities. Military forces were placed under French command, naval forces under British command. At a meeting of the Supreme War Council on November 17, Anglo-French committees were established under the direction of a Supreme Economic Council to secure common action in providing airplanes and munitions, raw materials, oil, food and shipping, and in prosecuting economic warfare against the Reich. They undertook to co-ordinate industrial production and use of raw materials in the two countries, avoid competition in purchases abroad, and equalize hardships caused by the reduction of imports. The Allied merchant fleet was placed under British command.

On December 12 the two governments agreed to keep their exchange rates fixed at 176.5 francs to the pound and to pool their extensive foreign assets. They bound themselves not to raise foreign loans or credits without each other's consent and to share the burden of financial assistance to other allies, such as Poland, on the basis of 40 per cent by France and 60 per cent by Britain. To reduce the supplies available to Germany in the Balkans, France joined Britain in concluding trade pacts or making heavy purchases in Yugoslavia, Bulgaria, Greece, Rumania, and Italy.

The Japanese Menace. Joint measures were also taken for the defense of French and British colonial possessions in the Far East against Japanese aggression. After Japan seized Hainan Island from China on February 9 and on March 31 seized the Spratly Islands between Borneo and French Indo-China, annexed by France in 1933, the Paris Government protested to Tokyo and retaliated by reopening Indo-China frontiers to the passage of military supplies for the Chinese armies. In May a French military mission arrived in Chungking to advise Gen. Chiang Kai-shek. Work on the French defenses in Indo-China was speeded, particularly on the newly developed naval base at Cam Ranh. In June an Anglo-French defense conference was held in Singapore, where plans were laid for co-ordinating their naval, military, and air forces in the Far and Middle East. New friction with Japan developed in December when the French-owned railway from Hanoi to Kunming was damaged by Japanese air raids.

The Conflict with Germany. In his speech before the Chamber of Deputies on March 17 asking decree powers for his government, Premier Daladier stated that Hitler's seizure of Bohemia and Moravia two days before had nullified the Munich Accord and the Franco-German friend-

ship pact of Dec. 6, 1938 (see 1938 YEAR BOOK, p. 266 f.). The Premier reflected the mood of the nation in indicating that since the Munich concessions had failed to satisfy Germany, France must halt further Nazi aggressions lest they deprive her of her remaining ally and render the French empire too weak to resist German and Italian demands.

Pursuance of this policy led to reaffirmation of the Franco-Polish alliance and the French declaration of war on the Reich on September 3 after Hitler had ignored the Anglo-French ultimatums to withdraw his troops from Poland (see GERMANY, GREAT BRITAIN, and POLAND under *History* for the events leading up to war). On August 25 Premier Daladier in a radio appeal to the nation made it clear that France would support Poland in resisting any attempt by Germany to force acceptance of its demands. Before war began, the French position was reiterated in notes and diplomatic representations in Berlin. During these critical days German diplomacy made a strenuous effort to divide France from Britain by asserting that the Reich had no quarrel with France and no claims to make upon her. The attempt failed.

French War Aims. In Premier Daladier's reply of October 6 to Hitler's peace proposals and in President Lebrun's response of November 12 to the mediation efforts of the Belgian and Dutch sovereigns, the French Government took the stand that there could be no peace with Germany "except by reparation of the injustices which force has imposed on Austria, Czecho-Slovakia and Poland. Neither can it be established unless effective political and economic guarantees assure in the future respect for the liberty of all nations."

In a Christmas Eve broadcast Premier Daladier went further and said that "exact count will be kept of the destructions that she (Germany) causes. She will, if it becomes necessary, pay for all she does." On December 29 he told the Senate that France and Britain, having pooled their resources, looked forward to the maintenance and extension of that principle when peace came. "I conceive," he said, "that the new Europe should have a wider organization than that which has existed until now. Commercial exchange must be multiplied, and perhaps federative bonds envisaged between the various European states."

Aid to Poland and Czecho-Slovakia. France demonstrated her determination to fight until Poland and Czecho-Slovakia were restored as independent nations by recognizing their governments in exile, permitting the Polish provisional regime to establish its capital on French soil, and advancing loans, equipment, and facilities for the organization of Polish and Czecho-Slovak armies in France. A 600,000,000-franc loan was advanced to Poland on September 7.

See ALGERIA, AUSTRIA, BELGIUM, BULGARIA, CHINA, DOMINICAN REPUBLIC, CZECHO-SLOVAKIA, GERMANY, GREAT BRITAIN, ITALY, MOROCCO, POLAND, SPAIN, STRAITS SETTLEMENTS, SYRIA AND LEBANON, TUNISIA, and TURKEY under *History*; COMMUNISM; EUROPEAN WAR; FASCISM; INTERNATIONAL BANKING AND FINANCE; MILITARY PROGRESS; NAVAL PROGRESS.

FRANCO, GEN. FRANCISCO. See SPAIN under *History*.

FRANKFURTER, FELIX. See SUPREME COURT.

FRANKLIN, PHILIP A (LBRIGHT) S (MALL). An American industrialist, died at Locust Valley,

L. I., N. Y., Aug. 14, 1939. Born in Ashland, Md., Feb. 1, 1871, he was educated in the public schools there, and in 1889 joined the Atlantic Transport Co. in Baltimore as an office boy. Transferred to the New York office in 1891, in 1902 he was elected president of the company. Upon the formation of the International Mercantile Marine Co., he became a vice president in this organization in 1916 and in 1921 was elected its president. He served as such until January, 1936, when he was made chairman of the board of directors. He resigned this position on Jan. 1, 1939, but retained his directorship in an advisory capacity.

Under his direction, the International Mercantile Marine Co. got rid of the White Star, the Red Star, and the Leyland Lines which it had operated for some years. For forty years a power in the shipping industry, he had direction of the United States Lines, the Panama Pacific Line, the American Merchant Line, and also operated for the U.S. Government the American Pioneer Line. Mr. Franklin made every effort to further the merchant marine of the United States and is credited with building up the United States Line by his introduction of the cabin liners *Manhattan* and *Washington*.

During the World War he served as chairman of the Shipping Control Commission of New York (Feb.-Dec., 1918) and also was a member of the Export Control Committee. For his services he received the Distinguished Service Medal.

FREEMASONRY. Activities. Architectural. The Missouri Grand Lodge has appropriated funds for a Masonic memorial at St. Louis (whence their expedition started) to the famous explorers, Lewis and Clark, both of whom were members of St. Louis Lodge, No. 111, Lewis having been its first master.

Cornerstones were laid:

February 1, of the new high school building at McAllen, Tex., under Grand Lodge auspices; *February 6*, of the Missouri State Teachers' College, Field House and Auditorium at Springfield, by the State Grand Lodge; *March 4* of the Trinity Heights M. E. Church at Dallas, Tex., under Grand Lodge auspices; *May 1*, of the high school building at Frederick, Md., by the local lodge; *June 8*, of the new Scottish Rite Temple in Washington, D. C., by the latter's Grand Lodge; *June 10*, of the Sullivan Co., Court House at Milan, Mo., by the State Grand Lodge; *June 16*, of the new grade school building at Liberty, Mo., by the State Grand Lodge; *July 8*, of the new high school building at Lufkin, Tex., by the State Grand Lodge; *August 11*, of the new Harrison County Court House by the Missouri Grand Master, assisted by other State Grand Masters; *August 31*, of the new Masonic Temple at Boonville, Mo., by the State Grand Lodge; *September 5*, of the old city Hall (relaid) at Charleston, S. C., by the State Grand Lodge; *September 16*, of the new U.S.P.O. at Savannah, Mo., by the State Grand Lodge (which has laid, altogether, 20 cornerstones during the year); *September 20*, of the Buchanan Co. Court House at Independence, Ia., by the State Grand Lodge; *October 5*, of the new Washington County Court House at Brenham, Tex., by the State Grand Lodge; *October 7*, of the new \$1,000,000 Transportation Building at Olympia, Wash., by the State Grand Lodge.

Dedication of Argus Lodge Temple at Canfield, O., took place on January 27; of the new \$250,000 Masonic Temple at Marquette, Mich., on September 8, under Grand Lodge auspices.

Relief. Secretary Smith of the Masonic Relief Association of United States and Canada, reported employment found for 15,666 persons in 1938 yielding an income of \$146,676. The St. Louis Masonic Employment Bureau, oldest of its kind in the country, placed 893 in positions during the year ending June 30, 1939 and the San Francisco Masonic Employment Service, organized 1911,

placed 1591 for the year ending July 31. The *Bureau de Secour* of Paris, under the direction of Grand Commander René Raymond of the French Supreme Council, made heroic efforts to relieve the distress of oppressed Masons in other European countries.

Anniversaries. Among anniversary celebrations for the year or not previously reported were:

Aug. 11, 1938, centenary of South Australian Masonry celebrated by Friendship Lodge, No. 1 at Adelaide.

Oct. 5, 1938, jubilee celebration of New South Wales United Grand Lodge, at Sydney, witnessed by some 6000 Masons, including representatives of all antipodean grand lodges with which it maintains fraternal relations.

Jan. 30, 1939, opening of golden jubilee of Duluth Scottish Rite bodies (membership, 16,200).

June 15, Sesquicentennial of Royal Oak Lodge, No. 190, London, active in forming the United Grand Lodge of England.

June 19-21, North Dakota Grand Lodge, Golden Jubilee Communication, with representatives present from many grand lodges of the United States and Canada.

October 10, Phalanx Lodge No. 31, of Charlotte, N. C., observed its 160th anniversary, with governors of three states on the program.

October 15, 33d, anniversary of Masonic and Eastern Star Home at Washington, D. C.

November 2, bust of Dandiel D. Tompkins, 6th Vice Pres. of U.S. and 1st Gr. Commander, Nor. Supr. Council, unveiled in New York Church of St. Mark's in the Bowwerie.

November 9, golden jubilee of Scottish Rite Consistory and Council at Richmond, Va., celebrated.

Anti-Masonry. Czechoslovakia. On May 20, a house in Prague which afforded the headquarters of four Masonic lodges, was wrecked by a violent explosion.

Italy. The first of a series of exhortations in Premier Mussolini's Pronouncement from the balcony of his palace at Rome on September 23 was: "Clean out the little corners where the remnants of Masonic Jews are still found."

Egypt (now aligned with the democracies at war) seems to be one exception to the list of autocratic governments which have long been conducting a crusade against Freemasonry. King Farouk is reported as taking an active part in reuniting rival grand lodges and his uncle, Hussein Sabra Pasha, is Grand Master of the new National Grand Lodge, whose official divan includes other government notables.

Assemblies, Conferences, Conventions, ETC. (National and International):

February 22, annual meeting of George Washington Masonic Nat. Memorial Assoc. at Alexandria, Va.

February 23, annual meeting of Masonic Service Ass'n., at Washington, D. C.

February 24, 25, Annual Grand Masters' Conference at Washington, D. C. (See *Ia. Grand Lodge Bulletin*, April, 1939).

May 25-27, annual meeting of National Sojourners at San Francisco.

June 26-29, annual session, Imperial Council, Nobles of the Mystic Shrine, at Baltimore; the night parade on June 28 found 12,000 "Nobles" in line, with numerous bands of music and 32 members of Abu Bekr Temple (Sioux, Ia.) Patrol, all mounted on milk white Arabian steeds, bred specially for such service, owned and equipped by their riders. Walter D. Cline of Wichita Falls, Tex. (once its Mayor), was elected Imperial Potentate and, among the officers re-elected was Governor Price of Virginia, who has long served as Imperial Recorder. Wm. L. Hein, of Lu Lu Temple, Philadelphia, was appointed Imperial Outer Guard and thereby placed in line for the highest post, which, however, he can hardly reach within a decade.

July 18-21, "Special Meeting of the United Grand Lodge of England," in London, and installation (July 19) of the Duke of Kent as Grand Master, by his brother King George VI, Past Grand Master of Scotch Masons; representatives present from 18 American and other overseas grand lodges.

July 25, special meeting of French Supreme Council, at Paris, to receive visitors from other Supreme Councils and consider plans for relieving distress of persecuted Masons in totalitarian countries.

September 12, 13, annual session of Canadian Supreme Council at Ft. William, Ont.

September 19-21, 23rd. biennial session of Masonic Relief Ass'n. of U.S. and Canada at New York City.

September 26-29, 127th annual session of Northern Supreme Council at Boston.

September 23, opening of International Conference at Boston; only three sessions were held as but four Supreme Councils, all in the Western Hemisphere, were represented by their own members.

October 15-20, Mother Supreme Council Session at Washington, three active members were elected and 75 received the 33rd honorary.

October 23, 24, triennial session of General Grand Council, Royal and Select Masters, at Charleston, S. C.

October 25, 26, triennial convocation, General Grand Chapter, Royal Arch Masons, also at Charleston.

Membership. Nearly 5000 lodges (of which about $\frac{1}{4}$ are in London) with an average membership of 80, comprise the constituency of the United Grand Lodge of England. In the United States (with 50 grand lodges) which have the largest membership, there were, in 1938, (the latest figures) 15,630 lodges with 2,521,651 members; in Canada, 9 grand lodges, 1380 lodges, and 171,677 members; in Australia, 6 grand lodges, 162,031 members; in New Zealand, 25,788 members. Reliable statistics from other countries are unavailable owing to war conditions.

C. SUMNER LOBINGIER.

FRENCH CAMEROON. See CAMEROON, FRENCH.

FRENCH CONGO. See FRENCH EQUATORIAL AFRICA.

FRENCH EQUATORIAL AFRICA. A French colonial territory, comprising the colonies of Gabon (93,219 sq. mi.; pop., 409,739); Chad (461,202 sq. mi.; pop., 1,432,555); Middle Congo (166,069 sq. mi.; pop., 746,605); Ubangi-Shari (259,388 sq. mi.; pop., 833,916). Total area, 979,878 square miles; total population (1937 estimate), 3,422,815. Chief towns: Brazzaville, the capital, 4000 inhabitants; Fort Lamy, 6000; Libreville, 4500; Bangui, 13,500; Port Gentil; Pointe-Noire. In 1937 there were 18,952 pupils enrolled in the 203 schools.

Production and Trade. The natural resources of the country are undeveloped. Many species of trees of industrial value, including wild rubber, grow in tropical forests having a total area of some 300,000 square miles. Cotton (9100 metric tons in 1938), groundnuts, maize, coffee (1900 metric tons in 1938), sesame, palm oil (6500 metric tons, 1938) and kernels (6900 metric tons, 1938), cacao, wild rubber, copper, zinc, lead, ivory, and gold (40,028 fine ounces, 1938) are the chief products. In the colony of Chad, large numbers of cattle, sheep, asses, camels, horses, and ostriches are raised. In 1938 (in old U.S. gold dollars) merchandise imports were estimated at \$5,000,000 (\$7,600,000 in 1937); merchandise exports at \$5,200,000 (\$7,200,000 in 1937). A railway connects Brazzaville with Pointe-Noire on the Atlantic, a distance of 318 miles.

Finance. The system of government introduced by the decree of June 30, 1934, allows only a general budget for the whole of French Equatorial Africa, and no individual budgets for the colonies. Local revenues are obtained mainly from customs duties; there are native poll taxes. The budget for 1938 was balanced at 224,629,000 francs (franc averaged \$0.0288 in 1938).

Government. According to the decree of June 30, 1934, French Equatorial Africa was consolidated into a single administrative unit under a governor-general aided by an administrative council and a secretary-general who assumes control

during the governor-general's absence. Governor-General, J. F. Reste (appointed March, 1936).

FRENCH GUIANA (gè-à-nà) AND **ININI**. A French colony in South America. Area, about 34,740 square miles; population (1936), 30,906. Cayenne, the capital, has 11,704 inhabitants, the other 14 communes have a total of 11,994 persons exclusive of the penal settlement of Maroni, the floating population of miners without fixed residence, and officials, troops, and native tribes. There are three ports—Cayenne, St. Laurent-du-Maroni, and Oyapoc.

Production and Trade. Rice, maize, manioc, cacao, coffee, and sugar cane are the main crops. The forests are rich in timber and commercial gums. Gold mining (40,637 fine ounces in 1938) is the main industry. In 1937 imports were valued at 52,708,646; exports at 36,853,999 (the franc averaged \$0.0405 in 1937). In 1939 there were 203 miles of roads.

Government. The budgets for French Guiana and Inini in 1937 were balanced at 17,704,755 and 3,329,542 francs respectively. A governor administers the colony aided by a privy council, and a council-general elected by the French residents of the colony. One deputy represents the colony in the French parliament. By the Decree of July 6, 1930, French Guiana was divided into two independent divisions—the coastal division remained French Guiana and the interior was named Territory of Inini.

FRENCH GUINEA. See **FRENCH WEST AFRICA**.

FRENCH INDIA. The colonies of France in India, consisting of Chandernagor, Karikal, Mahé, Pondichéry, and Yanam. Total area, about 196 square miles; population (1936 estimate) 300,000. Pondichéry (capital) had 50,209 inhabitants (1937 estimate). The chief products (with 1936-37 production figures, in metric tons, in parentheses) are: Rice (23,700); groundnuts (5200); and manioc. In 1938 the estimated value of general imports (in old U.S. gold dollars) was \$1,700,000 (\$1,900,000 in 1937); exports, \$3,000,000 (\$3,400,000 in 1937).

The local budget for 1937 was balanced at Rs3,240,936 (rupee averaged \$0.3733 in 1937). The colonies are administered by a governor (nominated by the President of France) aided by an executive council of 5 members and an elective general council of 28 members. In the French parliament the colonies are represented by a senator and a deputy.

FRENCH INDO-CHINA. A French dependency in southeastern Asia comprising the divisions shown in the accompanying table.

Division	Sq. mi.	Pop. (1936)	Capital
Annam ^a	39,758	5,653,200	Huê
Cambodia ^a	67,550	3,047,100	Pnom-Penh
Cochin China ^b	26,476	4,618,600	Saigon
Kwangchowang ^a	200	200,000	Fort Bayard
Laos ^a	89,320	1,010,800	Vientiane
Tonkin (Tongking) ^a	40,530	8,699,500	Hanoi
French Indo-China.....	263,834	23,229,200	Hanoi ^d

^a Protectorate. ^b Colony. ^c Also known as Kwangchow. Leased from China for 99 years in 1898 (territory increased in 1899) and placed under the authority of the Governor-General of French Indo-China. ^d The capital city is Hanoi, but during certain seasons of the year, when climatic conditions are oppressive, the government offices move to Saigon.

Chief towns: Hanoi, the capital, 145,491 inhabitants (1938); Binh-Dinh, 147,199 (1931); Cholon, 145,254 (1936); Haiphong, 122,000;

Saigon, 111,000 (1936); Pnom-Penh, 102,678 (1936); Tchékam, 35,000 (1935); Vientiane, 28,000 (1931); Battambang, 22,000 (1931); Hué, 33,222 (1934); Fort Bayard, 12,000 (1935). In 1937 the 6687 primary, secondary, and professional schools (exclusive of many private schools) had a total of 467,020 students; the university of Hanoi had 612 students.

Production and Trade. The output (in metric tons) of the chief products for 1937-38 was: Rice, 6,308,500; maize, 623,000; rubber, 5900; cane sugar, 42,700; tobacco, 12,300; groundnuts, 16,300; copra, 11,100; coffee, 2600 (2200 in 1939); cottonseed, 2700; sesamum, 3000; cotton, 1200; tea, 11,000; coal, 2,348,000; phosphates, 43,000; zinc, 4500; manganese, 1100; salt, 180,000; tin, 1600. The production of alcohol in 1938 totaled 11,438,604 gallons (U.S.). Gold produced in 1937 totaled 9870 fine ounces. In 1938, excluding bullion and specie, imports were 1,916,700,000 francs; exports, 2,844,800,000 francs (franc averaged \$0.0288 in 1938).

Communications. There were, in 1938, 22,270 miles of highway and 2087 miles of railway line of which 1565 miles belonged to the government. Air services are operated between Saigon and Batavia (Netherlands Indies); Hanoi and Vientiane; Saigon and Bangkok (Siam). There is a radio-telephone service to Europe from Saigon.

Government. The government for the whole of French Indo-China is administered by a governor assisted by a secretary-general, a government council, and a grand council for economic affairs. Cochin China, which is a direct French colony, is headed by a governor aided by a colonial council, and each of the four protectorates is headed by a resident-superior assisted by a protectorate council and a council of economic affairs. Governor-General, M. Jules Brévié (appointed Sept. 13, 1936).

See **CHINA**, **FRANCE** and **JAPAN** under *History*.
FRENCH IVORY COAST. See **FRENCH WEST AFRICA**.

FRENCH LITERATURE. Of course the literary output practically stopped shortly after the declaration of war with Germany, on September 3. As early as March 22, in view of the critical situation, an understanding had been reached between the Ministry of National Defence and publishers that all reviews and newspapers would be reduced by one half, or discontinued. Two important commemorations had promised to give great impetus to literary production: the one-hundred and fiftieth anniversary of the French Revolution, and the tercentenary of the birth of the great playwright Jean Racine. The first, falling in the summer (14th July) was not so seriously interfered with; there was a revival of interest in the project of Romain Rolland launched at the opening of the century, to create a "Théâtre de la Révolution," (it was not very successful at the time). One of his plays was represented at the Théâtre Français, *Le jeu de l'amour et de la mort*; while the other national theatre, the Odéon, presented a play by Ponsard, dating back to 1866, *Le lion amoureux* which shows a reconciliation of the spirit of the Revolution represented by a young hero, and the old regime impersonated by a lady of the higher ranks who is won over to the new idea. But the Racine commemoration was considerably cut short; the date of the birth of the poet coming on December 21, only early celebrations were held; although some of them important at that. The Théâtre

Français took the lead in new interpretations and stagings of many of Racine's plays, particularly *Bajazet* and *Athalie*; the new national theatre, of the Palais Chaillot (replacing the old hall of the Trocadero) was inaugurated with scenes from *Esther* and from *Les Plaideurs*; the latter play was represented also, on another day, on the steps of the Palais de Justice—where Racine had actually situated some of his scenes. In the spring a pilgrimage of the élite of French letters went to Port-Royal, in the charming Vallée de Chevreuse where Racine was brought up. A solemn mass was celebrated at the church of Saint-Etienne-du-Mont where Racine is buried. But all plans for the production in the fall of plays in the open-air theaters in the south of France (Orange, Vienne, Nîmes) had to be cancelled; so was a projected film of the life of Racine (scenario by Mme. Faure-Frémier); and, of course, all the elaborate ceremonies visioned for November and December. Some commemorative exercises were held, however, in French circles in the United States.

Reference has been made already to the inauguration of the most modernly equipped Hall for Spectacles in Paris, called the Palais Chaillot, seating 2000, and replacing in the basement of the new Trocadero the venerable old hall that had to make room for the 1937 World Fair. Besides the Racine plays, the Palais Chaillot staged magnificently an Easter play, *Jésus de Nazareth*, by P. Demazy, the *Jeanne d'Arc et la vie des autres*, by R. Bruyez (see YEAR BOOK, 1938), and the *Jeanne au Bûcher*, by P. Claudel, music by Honegger.

Two former habitats of great writers were turned into memorial museums: the famous "Grenier," of the Brothers Goncourt, and La Béchellerie, of Anatole France, in Touraine. A great event was the sale of the manuscripts of Montesquieu (the Bibliothèque nationale buying the manuscript of *L'Esprit des Lois*), and of Anatole France. There were three Congresses for French literature during the year, (a) in Liège, at the time of a world's fair, (b) at Lyon, presided over by the former Premier Herriot, and (c) in New York at the French pavilion of the World's Fair.

Some of the most important "Prix littéraires," which were awarded before the outbreak of war, must be mentioned: "Grand Prix de littérature" (French Academy) to Jacques Boulenger, for his collective works—chiefly historical and literary; "Prix du roman" (French Academy) to the famous flier, Antoine de Saint-Exupéry, for *La terre des hommes*—which is hardly a novel, but rather beautiful descriptions of an aviator's experiences, something like Anne Lindbergh's books; "Prix de la Renaissance," to M. Guierre, a naval officer, for *Seul maître à bord*; "Prix de critique" to John Charpentier; "Prix Louis Barthou," to Jacques Chevalier for *Cadenas*, religious and philosophical essays; "Prix Vireneque" of poetry to Jean Soulairel, *Prélude à l'amour* (spiritualism); "Prix Dramatique Eugène Brieux," to René Bruyez, for *Jeanne d'Arc et la vie des autres* (see YEAR BOOK, 1938).

Personalities. The death of Georges Goyau, secrétaire perpétuel of the French Academy, who had succeeded only a few months before to René Doumic; Received in the Academy: the famous advocate of return to royalism in France, Charles Maurras (June 8), and André Maurois (June 22); the reception of Jérôme Tharaud was postponed on account of the war. In the Goncourt

Academy, Sacha Guitry was elected against André Billy. The death was announced of Fernand Vandérem, a famous critic, of Jules Marsan, historian of literature, also of the famous actor, Pitoëff.

Poetry. An old poet of the Symbolist school, called Saint-Pol-Roux-le-magnifique, came out of his retreat to address an appeal to humanity to turn away from barbarism and go back to the teaching of Christ, *La supplique du Christ*. Jules Supervielle, today considered the leading French poet, offered a long poetic meditation on God and his creation, *Fable du monde* (a little book has just been devoted to the work of Supervielle, *poète de l'Univers*, by Chr. Sénéchal). Among other original productions in poetry one might mention Paul Eluard, the surrealist who, in *Donner à voir*, seems to recede from his rather extreme position of former years; Tristan Derème continues the series that won fame for him: *Les Poissons rouges*, *Les Escargots bleus*, *Les Tortues indigo*, *Le poème des griffons*, with another fantasy *L'Onagre orangé*. A newcomer in the field of poetry is the Belgian, Charles Plisnier, who won the Prix Goncourt in 1937 for *Faux Passeports*. In *Sacre* he utters words of despair, or rather of malediction at man's fate, somewhat in the note of Baudelaire. Much praise has been given to an *Introduction à la Poésie française*, by Thierry-Maulnier, a bird's eye view of the whole history of French poetry. An essay on *Situation de la poésie*, by Jacques and Raisse Maritain, sounds very cryptic to the uninitiated reader.

Theater. The number of plays appealing strongly to the public does not seem as large as usual, but one must remember that the year was cut short by the war. Paul Lévy's *Rien qu'un homme* has raised some curiosity, partly because some have tried to put a real name behind that of the hero, the Roman statesman Cincinnatus, the man who after serving gloriously his country retired to his estate where his countrymen found him behind his plough when they sought his return to active life. The attempt to write a play from the famous novel *Manon Lescaut*, by Madame Mauret—who had been so successful the year before with *Madame Capet* (Marie-Antoniette)—did not receive the same recognition.

Several plays present strange cases betraying possibly the unbalanced mentality of our age. Such is *Le Jardinier d'Ispaham*, by J. J. Bernard, of the "école du silence," i.e. where the silences of the character say more than the words they actually speak. In the play a woman whose life could be perfectly harmonious, lets herself be lead astray by a curious whim which causes a sort of collective misery for those with whom she comes in contact. Even more fantastic sounds the story told in *L'homme de nuit* by P. Demasy, a love at first sight crossed by another due to mere physical attraction. What about H. de Montherlant, the author of *Le Bestiaire*, who embroiders a play on the myth of *Psiphæ* offering her love to a bull? And what about Jean Giraudoux's *Ondine*, taking up the story of the German romanticist Lamotte-Fouqué and indulging in endless considerations of the mysteries of feminine love? And what again about Jean Sarment's *Sur les marches du palais*, in which a poetic soul is so exalted by love that he never enters the "palais de l'amour"?

Although one would rather like to do so, it is not possible to omit mention of depressing plays which abound in France ever since the Great War; the year 1939 yielded the usual crop, such

as Ch. de Peyret Chapuis's *Feu Monsieur Pic*, a "comédie rosse" as they were once called, such also as Sauvageon and Bost's, *L'amant de paille*, a family picture of unbalanced men and women who in our world (in which the strong survive) are of course lamentable victims. But the first prize goes to a woman, a young girl we are told, who succeeded in producing the most shocking play of the year, not only profoundly pessimistic, but just sordid; she is Marie-Louise Villiers, and the title of the play is *Les souris dansent*.

By way of contrast one can name fortunately witty plays like *Le nez de Cléopâtre* by Marchand et Crocikia, and *Le Nid* by Birabeau.

One of the most popular playwrights of today is Paul Raynal, who caused much discussion by his *A souffert sous Ponce-Pilate*, in which he tries to solve the psychological mystery of Judas, seeing in the traitor of Jesus a childish mind, easy victim of the Jews who persuaded him that he was saving his master while betraying him.

American plays are no longer a rarity on the French stage. Conspicuous in 1939 was *La Légion* (the First Legion) by Emmet Levery, which aroused considerable and rather flattering interest; while *Women* by Clare Boothe, was successful but considered an easy and somewhat cheap sort of satire although always welcome by popular audiences.

Some of the interesting "reprises" were *Cyrano de Bergerac* (Théâtre Français) fitting in with the warlike times we live in, and *La Pille Elisa* from the novel of the Goncourt and which had once served to launch the realistic stage. The *Mariage de Figaro* started a lively discussion among dramatic critics: Was Figaro a revolutionary character, or ought the famous "monologue" be considered as a light piece of wit.

The famous actor Jouvett published a provocative pamphlet *Réflexions sur le comédien*, emphasizing his two hobbies: that the audience is not supposed to *understand* a play in order to enjoy it, and that the atmosphere of the "salle" ought to be more intimate. Jouvett seems even to regret the time when there were "tabourets" on the stage to seat some of the audience.

Novel. Volumes XIV and XV of *Les Hommes de bonne volonté* by Jules Romains, *Prélude à Verdun*, and *Verdun* came out late in 1938 and were chiefly discussed in 1939. Critics seem to be unanimous in thinking that Romains has never been so powerful and that his description of the days of Verdun will remain one of the very best records. The heroic atmosphere of the most formidable episode of the war gives him an opportunity to apply his doctrine of "unanimism," to wit, that this heroism is collective and not individual, and represents the submission of the will of each individual soldier to the will of all. One knows that Romains never hesitates to bring in real characters, and here again the general opinion is that he has succeeded admirably; the figure of Pétain stands out particularly. Romains' novel is not ended yet, but Duhamel has given the last of his *Chronique des Paquier* (the 8th), and Montherlant also has given the fourth and last of his series begun with *Jeune fille*: in *La Lépreuse*, the celebrated writer after having married out of pity the woman who had pursued him, ran away to Africa and took a little black mistress who was a leper; he willingly infecting himself . . . to experience some new sensation and kill his boredom. But for these two "romans fleuves" that are stopped, one at least has begun. It comes from the pen of

Charles Plisnier, and is called *Meurtres*. In the first two volumes a peasant kills his wife who is suffering terribly of cancer and who has asked him the favor; he loves her and complies; he is acquitted, sent to an asylum, where he seems to get actually insane; freed, however, after a while he goes to Russia and becomes a bolshevik.

François Mauriac earns new laurels with *Chemins de mer*, a story where he does not retreat an inch from his terrible doctrine of the radical corruption of the human race. Except possibly one, all the members of the family whose story he tells are as mediocre as they are corrupted, and are on the road to perdition. There is disagreement whether the title refers to those people getting lost as in the sea, or whether it refers to the one acceptable character who tries to redeem himself by leaving France for Africa, sailing from Marseilles.

One of the strongest books of the year, although marked also by the atmosphere of profound pessimism, is called *Les Javanais*, by Jean Malaquais, a newcomer. He depicts a sort of colony of human wrecks, refugees from different countries who gather their misery in an isolated corner of France—a tragic picture indeed! Daniel Rops was awarded the coveted Prix Née for a novel *L'épée de feu*, almost as depressing as the preceding; the "flaming sword" is that of the angel who has expelled man from Eden and forbids him to re-enter. The same note is found again in Pierre Lescure, *Tête au vent*, a man who endeavors to solve a mysterious problem that haunts his life, does not succeed, and finally tries to forget in a disorderly life. Mme Simone's *Paradis terrestre* bears an ironical title. Fr. Bonjean announces the lamentable story of his book by the mere title, *Confidences d'une fille de nuit*. Guy Mazeline does not forget his earlier grim outlook on life in *L'amour de soi-même*. Here belongs too *La vie et le roman* by Pierre Lièvre whose premature death has just been announced.

Henry Bordeaux published his fiftieth novel, *Cendres chaudes*, a study of the problem of divorce; while Pierre Benoit adds to the long list of his novels, *Notre Dame de Tolosa*, in his usual vein, and Simenon offers another mystery tale, *Le cheval blanc*, to his former ones. Robert Brasillach claims originality in his novel *Sept couleurs*, a study of the age of adolescence. Roger Verceel writes one of his strongest sea novels in *Jean Villeurin*—many in reading it have remembered Loti's *Pêcheurs d'Islande*; the sharp contrast between the primitive accommodations of the fishermen at the time of Loti and the remarkable "modern improvements" that render the life of those men so different cannot fail to appear astounding. Peisson tells the sea-adventures of a young boy of eight who ran away from home, in *Le voyage d'Edgar*. Stories of country life are offered by Perrochon in *Babette et ses frères*, and also by Raymonde Vincent (last year's Prix Femina with *Campagne*) who gives a rather similar story of a young farmhand *Blanche*. Maurice Genevoix, now called the "grand animalier de France," tells the story of a stag, in *La dernière harde*. The Protestant writer Ph. Amiguet takes us in the mountain regions for a story of church life, *Où volent les aigles*. Of the pretty romanesque type is *L'amour sorcier*, situated in the Spain of picturesque and romanesque memory, by Claude Boyer and Francis de Miomandre.

Jean Giraudoux returns to the novel with *Le choix des élues*, a characteristic mixture of realism and fantasy: Two women are under the spell of a mysterious genius which they call Abalstittel and who suggests that they both, but in very different manner, give up a happy and rational life for running after chimeras. In the same class of tales must be placed Edmond Jaloux's *L'oiseau-lyre*: A promising writer is happily inspired by Violette, the "oiseau-lyre," but a woman looking for a love adventure comes up, takes hold of the young man who, henceforth, produces only the most commonplace literature. Two novels deal with the problems of religious faith, one in orthodox Catholic spirit, Emile Bauman, in *L'Excommunié*, the other in a more objective manner, André Billy, (the author last year of *L'Approbation*) in *Introibo*—both tell of rather unusual cases confronting two priests. Another writer who preaches a very uncompromising ascetic gospel is Louis Artus, in *L'hérésie du bonheur*.

Three historical novels, by three masters in the field are: Albéric Cahuet, *Les abeilles d'or*, depicting the days that Napoléon spent on the island of Elba before the "cent jours" and before being removed to St. Helena; Henry Bordeaux, in *Le Gouffre*, telling of the "épopée marocaine" under Liautey, and André Chamson, in *La Galère*, endeavoring to explain the terrible days of February, 1934, when a communist upheaval only just failed to upset the Republic.

Among the many volumes of short stories the following seem to have won general recognition as particularly original: A. Fraignaux, *La grâce humaine*, (six children's stories for ages 13 to 15); J. P. Sartre, *Le mur*, a symbolic title, the "wall" being reality beyond which man tries in vain to escape (Sartre was the author of the much commented *La nausée* in 1938); Alex. Arnoux, *Paris sur Seine*, various stories from various parts of the capital; Henri Fauconnier, *Visions*, by the author of *Malaisie*, the 1930 Goncourt prize, and R. Francis, *L'oie* (six short sketches).

Varia. Personal recollections are always very favorably received; some of those for the year were: Louis Bertrand, (vol. vi of his series *Une destinée*) *Jérusalem*; Julien Green, continuation of his *Journal, 1935-1939*; A. de Chateaubriant, *Les pas ont chanté*; Emile Henriot, *Le kivre de mon père* (one of the most charming books of the year); P. L. Fargue, of the Académie Mallarmé, *Le piéton de Paris* (his loafings in his own Paris); Robert Dreyfus, *De Monsieur Thiers à Marcel Proust* (memoirs both of political and literary life); Duhamel's *Mémoires de la guerre blanche*, collection of articles of one of the leaders of public opinion in France to-day. André Demaison, *Terre d'Amérique*, gives alert sketches written down during a rapid crossing of America—somewhat different from the usual pro or con books of travellers in the United States. Of a more philosophical nature is Michel Seuphor's *L'évasion d'Olivier Trickmasholm*, which may be an answer to Denis de Rougemont *Journal d'un intellectuel en chômage*, of 1938, who did not see the necessity of "evading" life; the latter tries his pen on another subject, *L'amour de l'Occident* in which he claims that Isolde did not love Tristan, at least if one calls love the love which is not purely sensual. Maeterlinck continues his attempts to solve the great mystery of death in *La grande porte*. Paul Valéry gives his fourth volume of

Variétés—speeches, various articles of this oracle of the day. Let us mention in various fields: *Le livre de mon chien* by the now very old poet Haraucourt; P. Reboux, *Les deux amours de Cléopâtre*; P. de la Varenne *Charlotte Corday*. Finally, a book that was not expected from the pen of the king of present day fancy literature, Jean Giraudoux's *Pleins pouvoirs*—a book in which this famous writer discusses with much earnestness the political situation of the age; it may have been this book that induced the French government to make him head of the "Information service" during the war.

Literary History and Criticism. The amount of excellent work done in France during recent years in these domains is astounding, and it is naturally impossible to mention all that would deserve it. Hence a few representative books only will be named. First of all is the tenth volume of the epoch-making *Histoire de la langue Française*, under the title *La langue classique dans la tourmente* (i.e. during the Revolution), prepared by the late F. Brunot, and edited by his pupil and successor at the Sorbonne, Ch. Bruneau. A great collective work began to appear, under the direction of internationally known French scholars, among them Edmond Faral, the distinguished head of the École normale supérieure, *Les Lettres françaises*; there will be six large volumes when completed, a sort of encyclopedia of the history of French literature. Among individual works: Etienne Gilson, the famous medievalist, writes on *Abélard et Héloïse*. The new edition of Montaigne's *Essays*, 16th century (Soc. des Belles Lettres) has reached the 11th volume; and for the 16th century; one must mention also H. Chamard's *Histoire de la Pléiade*, plus several short volumes on Marot (Plattard), *La Boétie* (H. Day) *Rabelais* (Plattard) *Montaigne* (P. Moreau), and Calvin (Pannier's ed. of *Institution chrétienne*). For the 18th cent.: *Diderot* (J. Pommier) and *Voltaire* (J. R. Carré, R. Naves) receive much attention. In the 19th the year was favorable to Madame de Staël (P. de Lacretelle, *Mme de St. et les hommes*, and Comtesse de Pange Aug. Guill. Schlegel et *Mme de Staël*), and to Benjamin Constant, a very important book on this political writer of the time of Napoléon, by A. Fabre-Luce; *Chateaubriand*—as now for several years in succession—inspires excellent pages (M. Duchemin); Flaubert comes in three books, all or in part, by Ch. Bagnol, J. de la Varenne, and very especially by Henri Guillemin who presents a decidedly very humane Flaubert. Also, there is a new *Verlaine* (F. Carco); a study of *Huysmans's art* (Cresset); another on the problem of Loti's *Désenchantées* (R. Lefèvre: Was Loti deceived by the women of the harem whose experiences he is supposed to report?). Finally let us mention V. Giraud's *De Chateaubriand à Brunetière, Essai sur le mouvement catholique en France au XIXe siècle*. The public seems to want information on present-day writers more than ever before; thus M. Lecat offers a *Philosophie de Maeterlinck*; P. Archambault, a *Vie héroïque de Péguy*; M. Clavière, a *Charles Maurras*; Ch. Sénéchal, a *Jules Supervielle, poète de l'univers*, and Daniel Mornet publishes the substances of his Columbia lectures the summer of 1939, *Introduction à l'étude des écrivains français d'aujourd'hui*.

September to December. Great efforts were made to keep things as normal as possible; the results were what could be expected. The annual reunion of the Institute, the five Academies was

held in October, but in a smaller room of the Palais Mazarin, not under the famous "Coupole." Louis Bertrand could not deliver his prepared address on Racine, being with the army; he was replaced by the Baron Seillère; Paul Valéry spoke on "La pensée et les arts." On December 7 the reception in the French Academy of Jérôme Tharaud—delayed on account of the war—took place; Tharaud occupies the "fauteuil" of Joseph Bédier.

The review *Révolution Française* published in the fall a special number on "Le cent-cinquantième de la Révolution"; and the *Revue de littérature comparée* also issued in the autumn a special "Racine" number. The great periodicals continued to appear, but, as explained above, in half their normal size: *Revue des Deux Mondes*—with a novel by Duhamel, *Combats contre les ombres*; *Revue de Paris*—with a novel by Thérive, *Comme un voleur*; *Mercure de France*, *Nouvelle Revue Française*, and a few others.

The theaters, entirely closed for a while, opened gradually without having yet reached the normal by the close of the year. The "Théâtre français" started with some "matinées poétiques" (from 3 to 5 o'clock), then produced some plays in the late afternoon, finally some plays in the evening. Sacha Guitry, in his playhouse, resumed his practice inaugurated during the Great War, of "spectacles coupés"—short numbers which will better stand interruption by air raids.

Some papers were started at the front, comic papers of course, for and by the soldiers; the first was *Le train qui regarde passer le boeuf*. The *Crapouillot* of 1914–18 fame came to life again.

One excellent novel, evidently printed when the war broke out, has to be mentioned: *Matterhorn*, by Henri Peyré, a graphic story centering around the grim aspects of climbing the famous mountain in Switzerland.

There seems to have been some hesitation whether or not the juries for the "Prix littéraires" usually awarded in December would meet. They did, and here are some results: "Prix Goncourt," to Philippe Hériat (author of *Les mauvais garçons*, and winner in 1891 of the Prix Renaudot with *L'Innocent*); his crowned novel this year is *Les enfants gâtés*—a French girl of bourgeois family milieu goes to the University of California where she falls in love. The "Prix Femina," goes to Paul Vialar, for *La rose de la mer*, a sea novel; and the "Prix Renaudot" to Jean Malaquais, for *Les Javanais* (see above). The "Prix interallié" rewards Roger de la Forest, for *Les figurants de la mort*, and the "Prix Moréas" (poetry) André Blanchard for *Entre jour et nuit*.

ALBERT SCHINZ.

FRENCH REVOLUTION, 150TH ANNIVERSARY OF. See FRENCH LITERATURE.

FRENCH SOMALILAND. See SOMALILAND, FRENCH.

FRENCH SUDAN. See FRENCH WEST AFRICA.

FRENCH TOGO. See TOGO, FRENCH.

FRENCH WEST AFRICA. A French colonial territory comprising the colonies shown in the table in the next column.

Chief towns: Dakar (capital), about 42,000 inhabitants; Saint Louis, 33,598 (1937); Porto Novo, 25,724 (1935); Bamako, 23,258 (1938); Abidjan, 17,476 (1935); Grand Lahou, 16,430

(1935); Kaolak, 15,645 (1936); Diourbel, 15,544 (1936); Ouagadougou, 14,172 (1935); Rufisque, 13,559 (1933); Thies, 18,502; Sikasso, 11,817 (1938).

Colony	Sq. mi.	Pop. (1937)	Capital
Dahomey....	43,232	1,289,128	Porto Novo
Dakar ^a	60	126,929	Dakar
French Guinea.....	96,886	2,065,527	Conakry
French Sudan ^b	590,966	3,635,073	Bamako
Ivory Coast ^b	184,174	3,981,459	Abidjan
Mauritania.....	323,310	370,764	St. Louis ^c
Niger ^b	499,410	1,809,576	Niamey
Senegal.....	77,730	1,666,374	St. Louis
French West Africa ..	1,815,768	14,944,830	Dakar

^a Including Dependencies. ^b Upper Volta ceased to be a colony on Jan. 1, 1933, and its territory was divided among three other colonies as follows: French Sudan received 20,226 square miles; Ivory Coast, 59,212 square miles; Niger, 27,290 square miles. ^c The lieutenant-governor of Mauritania resides in St. Louis in the colony of Senegal.

Education. The 514 schools of all kinds had 68,310 pupils enrolled in 1936–37; the expenditure for education amounted to 27,367,000 francs in 1938.

Production and Trade. The chief products (with production figures for 1938 unless otherwise stated), in metric tons, were: Groundnuts (756,000); maize (520,000); rough rice (420,000); palm kernels (31,600); palm oil (13,700); cottonseed (18,000 in 1936); coffee (11,000 from Ivory Coast); cotton (5500 in 1936); tobacco (2300, estimated); sesamum (900); wool (200 in 1936 from the French Sudan). Gold exported in 1938 amounted to 127,220 fine ounces. Textiles, fuel oil, machinery, foodstuffs, and beverages were the main imports. In 1938 (values are given in old U.S. gold dollars), imports were valued at \$27,300,000; exports at \$24,100,000.

Communications. In 1938, the railways, consisting of four main lines connecting each of the coastal territories with the Niger Valley, had a total length of 2324 miles exclusive of narrow-gauge lines. There were 27,301 miles of highways. Air services were operated between Dakar and Pointe-Noire, Middle Congo, and between Cotonou in Dahomey and Toulouse, France. During 1937, 9564 vessels of 13,170,500 tons cleared the ports.

Finance. The various budgets for 1938 (with 1937 figures in parentheses) were balanced as follows: General budget, Fr335,000,000 (Fr200,200,000); the aggregate of the local budgets, Fr498,162,000 (Fr299,589,000); supplementary budgets, Fr478,597,000 (Fr347,788,000). The franc (Fr) averaged \$0.0405 in 1937; \$0.0288 in 1938.

Government. French West Africa is governed by a governor-general, aided by a council, the seat of government being at Dakar. Each colony is under the direct administration of a lieutenant-governor. Governor-General, Jules M. de Coppet (appointed, Sept. 13, 1936).

FREUD, froit, SIGMUND. An Austrian physician and psychopathologist, the founder of psychoanalysis, died in London, Sept. 23, 1939. Born in Freiberg, Moravia, May 6, 1856, he was educated at the University of Vienna (M.D., 1881). Early in his practice of medicine he became interested in nervous disorders. After study under Charcot at Salpêtrière, Paris, in 1885, he returned to Vienna to continue his investigations and practice the treatment of such ailments. In 1902 he was appointed professor of neurology at the University of Vienna, a position which he held until the German annexation of Austria in March, 1938. Of

Jewish stock, in June of that year he was driven to leave the country and sought refuge in London.

His novel system of psychology, a fresh approach to the study of human conduct that gave to the dictionary a new jargon, attracted the attention of Alfred Adler, Carl Jung, and others who became his disciples in 1906. Two years later they founded the International Congress of Psychoanalysis. Subsequently, several of his pupils, notably Jung and Adler, differed with the master and founded their own schools.

Freud's principal contributions to science were a new method for the analysis and treatment of hysteria and a comprehensive theory of dreams. It was his belief that most cases of hysteria were the indirect result of a nervous shock emotionally and usually sexual in nature. The ideas involved are, for various reasons, suppressed or inhibited until at length they are forgotten, i.e., cannot voluntarily be recalled. They find expression, however, in the hysterical state. The method of psychoanalysis consists in the employment of the patient's free associations as an aid to the subsequent recall of the forgotten or submerged group of ideas. When this end is accomplished the patient is believed to be on the highroad to recovery, since the ideas, once suppressed, are now brought into connection with normal associations and the cause of the hysteria is removed. After the World War his international reputation was enhanced. In his writings he tended to make less use of the principle of sexual symbolism, to which, his critics claimed, he gave too much importance, and relied more on the direct intuitions afforded by the psychological situation. The conception of libido continued to play an important role, but without complete identification with concrete sex experience. His psychology still being a highly controversial subject, to make a just estimate of the man and his work is not possible.

A prolific writer, his works were translated into many languages and went through many editions. They include: *Zur Auffassung der Aphasien* (1891); *Kinderlähmungen* (1891, 93, 97); *Studien über Hysterie* (1895), with J. Breuer; *Traumdeutung* (1900); *Psychopathologie des Alltagslebens* (1901); *Über den Traum* (1901); *Witz und seine Beziehung zur Unbewussten* (1905); *Drei Abhandlungen zur Sexualtheorie* (1905); *Wahn und Träume in Jensen's Gradiva* (1907); *Kindheitserinnerung des Leonardo da Vinci* (1910); *Sammlung kleiner Schriften zur Neurosenlehre, erste bis fünfte Folge* (1907-22); *Über Psychoanalyse* (his famous *Origin and Development of Psycho-Analysis*) (1910); *Totem und Tabu* (1913); *Vorlesungen zur Einführung in die Psychoanalyse* (1917); *Jenseits des Lustprinzips* (1920); *Massenpsychologie und Ich-Analyse* (1921); *Das Ich und das Es* (1923); *Hemmung Symptom und Angst* (1926); *Die Frage der Laienanalyse* (1926); *Die Zukunft einer Illusion* (1927); *Das Unbehagen in der Kultur* (1930); *Neue Folge der Vorlesungen zur Einführung* (1932); *Briefwechsel mit A. Einstein: Warum Krieg?* (1933); *Moses ein Ägypter* (1937); *Der Mann Moses und die Monotheistische Religion* (1939). Also, he contributed to and was the editor of *Internationale Zeitschrift für Psychoanalyse und Imago* and of *Schriften zur angewandten Seelenkunde I-XIX*.

Dr. Freud visited the United States in 1909 where he received the honorary degree of Doctor of Laws at Clark University. In 1930 he received the Goethe prize of the City of Frankfurt, Ger-

many, and in 1936 he was made an honorary member of the Royal Society.

FRIENDLY ISLANDS. Same as TONGA ISLANDS.

FRIENDS, or QUAKERS. A mystical religious sect founded in England by George Fox in the middle of the 17th century. The chief group, known as the Orthodox Group of the Religious Society of Friends, organized the Five Years Meeting of Friends in America in 1902. See RELIGIOUS ORGANIZATIONS.

FRITSCH, GEN. BARON WERNER VON. A German army officer, killed in the siege of Warsaw, Poland, Sept. 22, 1939. Born in Beurath, Germany, Aug. 4, 1880, he was educated in local schools, and in 1898 joined Field Artillery Regiment No. 25. After attending the War Academy and serving with the General Staff in Berlin, at the outbreak of the World War he was a captain. He served throughout the War as a general staff officer with the rank of major. His military qualities were not recognized until after the Armistice and in 1922 he was made brigade commander of the Fifth Artillery. Subsequently he entered the ministry of defense as a colonel and commanded the 2d Artillery at Stettin. In 1932 he was promoted to lieutenant general in command of the Third Military Department in Berlin, and although no admirer of the Nazi policies, soon after Hitler came into power, he was made chief of staff with the rank of general of artillery.

A conservative in military tradition, a severe disciplinarian, and an eminent strategist, he was credited with rebuilding the army of the Reich. In the army purge of Feb. 4, 1938, General Fritsch was relieved of his command on the grounds of "ill health," and shortly after was accused on a serious charge but was cleared by a military trial before a court of honor. In August, 1938, he was appointed honorary chief of the 12th Artillery Regiment "in recognition of the great service in rebuilding the Third Reich." In the announcement of his death it was reported that he was "carrying out a dangerous reconnoitering operation," and surprise was felt that he was in such a position and not with his staff officers in the rear.

FRUIT. See HORTICULTURE; ENTOMOLOGY, ECONOMIC.

FSA. Farm Security Administration (q.v.).

FSCC. Federal Surplus Commodities Corporation (q.v.).

FTC. Federal Trade Commission (q.v.).

FUEL. See LIVING COSTS AND STANDARDS.

FUKIEN. See CHINA under *Area and Population*.

FUR SEALS. See FISHERIES, BUREAU OF.

FUTUNA AND ALOFI. See NEW CALEDONIA.

GABUN. See FRENCH EQUATORIAL AFRICA.

GALAPAGOS ISLANDS. See ECUADOR.

GAMBIA. A British crown colony and protectorate in western Africa. Total area, 4068 square miles; total population (1931 census), 199,520. Capital, Bathurst, where resided most of the 14,370 inhabitants of the island of St. Mary. In 1938 there were 18 schools (13 elementary, 4 secondary, and 1 school for training teachers).

Production and Trade. The chief products are groundnuts (46,981 tons exported in 1938), hides, skins, palm kernels, and beeswax. Rice, maize, guinea corn, cassava, and cotton are grown for local consumption. In 1938, total imports (including specie, etc., of £128,350) were valued at £405,790 (aircraft parts, £26,016; cotton piece

goods, £23,461; metals, £22,125; kola nuts, £21,988; exports (including re-exports of £80,150), £335,851 (groundnuts, £246,691; palm kernels, £4535). Bathurst is an important link in the Lufthansa air service from Frankfort, Germany, to Natal, Brazil. During 1938 the 429 ships entered and cleared had a total net tonnage of 1,135,524. Highways extended over 860 miles in 1938.

Government. For the year ended Dec. 31, 1938, revenue totaled £166,749; expenditure, £263,199. On Dec. 31, 1938, the public debt was £38,760 against which the sinking fund for its redemption totaled £4609. The area of the colony (consisting of Bathurst and Georgetown and some adjacent land) is 69 square miles, but by an ordinance enacted in 1902, all Gambia except the island of St. Mary (4 sq. mi.) was placed under the protectorate system. In the protectorate there are four provinces each administered by a commissioner who is responsible to the governor. The governor, who controls the whole country, is aided by an executive council of 4 members. There is a legislative council for the colony, of which the governor is president, having 10 other members (5 official, including the members of the executive council; 4 unofficial; 1 ex officio). This legislative council has power to legislate for the Gambia protectorate. The Bathurst Advisory Town Council advises the government upon matters relating to the inhabitants of Bathurst. Governor and Commander-in-Chief, Sir W. T. Southorn (appointed, Mar. 10, 1936).

GAMBIER ISLANDS. See OCEANIA, FRENCH ESTABLISHMENTS IN.

GARBAGE AND REFUSE DISPOSAL. Garbage of many of the smaller cities of the United States and of some of fair size, is still fed to hogs. Many cities dump garbage and refuse on land otherwise unused and unusable until low and marshy areas have been filled. Where proper care is taken of such disposal areas they are called sanitary fills. Incineration of garbage and combustible refuse is gaining in cities both large and small. Some of the relatively small cities in the past few years have built joint garbage and sewage disposal plants. Most of these are combined only in that the sludge from treatment tanks is burned with the garbage and refuse. In a lesser number of cases, the order is reversed and the garbage (other refuse excluded) is ground and put through the sewage treatment plants. The combined sludge may then be burned, used as fertilizer (but rarely) or used to fill in low land. Data gathered by the U.S. Public Health Service as of 1937, but only recently made public, show that of 964 cities of 10,000 population or more in the United States, the garbage of 397 of 763 reporting disposal was fed to hogs. In 22 cases the hog farms were owned and operated by the cities. In 19 of the 48 states more than half the cities reporting used this method of garbage disposal. Most notable of these were two states, one on each Coast: Massachusetts, 53 of 56 cities; California, 38 of 41. The author of the paper (acting chief, division of Zoology, U.S.P.H.S.) maintained that since the garbage of only 29 of the 397 cities was cooked before being fed to hogs, and not all of it in some cases, garbage disposal by feeding to hogs is a means of spreading trichinosis among both hogs and humans.

Shutting down some of New York City's incinerators in 1938 and establishing sanitary fills in Queens Borough to reclaim land aroused the

ire of officials and citizens of that section. The grand jury of Queens County indicted the sanitation and health commissioners of New York City for maintaining a nuisance. By agreement the indictments were dismissed and a committee of outside health authorities to investigate the fills was appointed by the surgeon general of the U.S. Public Health Service. Earlier, a comprehensive study of the sanitary fill method of garbage and refuse disposal was instituted to be conducted by New York University and the WPA under an allotment of \$134,000 for biological and physical research. The project is sponsored by the New York City Department of Sanitation. A large advisory committee was created.

Across the continent, San Francisco, Seattle, and Portland are continuing sanitary-fill methods of disposal. (See *Engineering News-Record*, July 6, August 3, and September 28.) San Francisco and Seattle had each provided, built, and abandoned incinerators. Portland had also done the same but uses its latest incinerator to burn some of its wastes.

A 600-ton incinerator for Pittsburgh, Pa., was scheduled for completion at the close of the year. Smaller incinerators were completed at Mamaroneck and Schenectady, N. Y. Grinding equipment with a capacity of 40 tons an hour was being installed at Gary, Ind., to prepare the garbage of 170,000 people for digestion with sewage sludge. It was estimated that the gas produced from the garbage would have a power value of \$15,000. (See SEWERAGE AND SEWAGE PURIFICATION). At Goshen, N. Y., a garbage grinding plant was installed. The ground garbage is ejected by air to the sludge digestors of the local sewage treatment works. At Tonowanda, N. Y., and Dayton, Ohio, garbage incinerators were under construction, with provision for burning sewage sludge at Tonowanda while at Dayton sludge partly dried was to be further dewatered sufficiently for either burning or for use as a fertilizer.

In Holland, the garbage of Amsterdam, which for years was shipped to the country for use on land is now barged to incinerators. At The Hague, refuse is shipped by rail "to a distant province," dumped, sprayed with water to aid decomposition, screened, and spread on sandy land. (*The Surveyor* (London) Aug. 18 and 25, 1939.

M. N. BAKER.

GARDEN CLUB OF AMERICA, THE. An organization founded in Philadelphia, Pa., in 1913. It consists of 119 member clubs, with a membership of over 8000 in 34 States and Hawaii. The objects of the association are: To stimulate the knowledge and love of gardening among amateurs; to share the advantages of association, through conference and correspondence in this country and abroad; to aid in the protection of native plants and birds; and to encourage civic planting. The office is at 598 Madison Avenue, New York, N. Y.

GARMENT INDUSTRY. Depressive conditions continued to afflict the men's and women's apparel industry during 1939. Trade adversity was attributed primarily to the sustained economic dislocation. Intensive competition and the hazardous style element, coupled with the ever-diminishing capital structure of individual manufacturers, impaired the healthful existence of the garment trades to a more disturbing degree than might be expected under ordinary circumstances.

Purchasing and production operations, based

on an eagerness for volume rather than on a careful study of marketing possibilities, were less common in 1939 than previously. At the outlook of hostilities abroad, with prices of many commodities rising sharply, the needle trade demonstrated the extent to which it has mastered the lesson of conservatism by declining to be stampeded into providing for future requirements on a substantial scale. The soundness of this cautious position became increasingly apparent as the fall season advanced and it was shown that neither retailers nor the public permitted fear of possible price increases to induce them to liberalize their purchases.

A significant tendency during the past year was the retail policy of greater concentration of commitments among a selected few sources of supply. Motivating this procedure was the stores' desire to insure closer collaboration in gaining preferred merchandise and service.

Evidence of the need for more efficient timing of the seasons in the higher quality branch of the dress industry was forthcoming in the sponsorship of earlier spring openings. This was conceived as a co-ordinated effort to obviate the danger of a deliveries' problem that otherwise would enter the scene at the height of the season; to sustain the reorder demand; and to prolong the regular selling period. See FASHION.

Substantial increases in style registrations and label distribution for 1939 over 1938 were reported by the Fashion Originators' Guild of America, national organization of women's apparel creators. The styles registered during the past year totaled 42,467, compared with 40,664 in 1938, while the distribution of labels to members of this organization was 6,131,718 in 1939 and 4,418,785 in the previous year. The rise in the number of styles registered indicated endeavors on the part of the Guild houses to broaden the diversity of their fashions. The increase in label distribution was due, to some extent at least, to the larger membership in 1939.

Marked expansion in the production of sportswear and popular priced wash dresses, and a decline in the importance of the daytime dress all contributed to a relatively poor showing for the regular dress field as compared with other items in the feminine apparel family.

In the women's coat and suit market, there was a rise of about 6.6 per cent in the number of units sold to the retailers all over the country. This was an estimate gathered from the sale of labels to manufacturers and jobbers in the United States by the National Coat and Suit Industry Recovery Board, whose members are responsible for 95 per cent of the country's total production of their garment types. In 1939, 16,269,495 labels were sold, as against 15,403,178 distributed during 1938.

Increase in volume can definitely be linked to a lowered unit price, which was also reflected in the retail departments. Inroads from trades such as blouses and skirts, the strong public demand for separate fur jackets, and the decline of fur-trimmed demand to two or three desirable trimmings hurt profit chances in the coat trade where labor costs exceed those of all other divisions of the industry.

The retail picture was naturally affected by these developments, although the majority of stores merchandised conservatively and managed to make a small profit. In the New York Federal Reserve area, for instance, coat and suit sales

showed a decline for the first nine months of 1939 as compared with 1938. The situation was somewhat improved in cities outside the New York district, but only slightly.

The mortality rate in the millinery trade continued high in 1939. Many manufacturers drew less than the most highly paid workers, while 50 per cent of the firms, it was indicated, made no profit at all. A fatal weakness of this trade of marginal producers was the fact that the failure of one concern led to the formation of three or four. Yet 1939 was a comparatively good year, especially for better hat makers. Two million more hats were sold than in 1938. The spring season, particularly, paid dividends, and many exclusive houses went from 10 to 30 per cent ahead.

Another record year for the full-fashioned silk hosiery trade, exceeding last year's volume of 42 million dozen pairs, was the 12-month period just past. But 1939 was another year of slender profit.

Retail fur volume for the season starting last July was about 25 per cent ahead of the year previous, but this was not as encouraging as it sounded, because 1938 sustained a loss from the year before. However, stores ended the season in good condition, and with low stocks. Manufacturers, too, ended the season with little stock, having had a fairly good year. The raw fur market opened on a much stronger tone than in 1938, which is regarded as a warning that business may suffer because of the price situation.

Sales of men's clothing and furnishings' stores and departments reached a preliminary total of \$1,050,000,000 in 1939, as compared with about a billion dollars in 1938. This represented an increase of about 5 per cent, or approximately the same rise as was registered in consumer income. The year witnessed a replenishment of stocks and a return to more normal operations. In 1938, it should be pointed out, one of the most drastic liquidations of inventories in years occurred, purchases of clothing from manufacturers by the WPA completing a reduction of inventories that had already practically run its course.

Men's and boys' clothing production rose about 28 per cent in the past year.

The advance from May through most of July of the shirt-slacks combination and of tropical worsted and worsted-mohair suits, as well as a growing demand for sport slacks made of all types of materials, presented the clothing trade with an aggregate of business that was most encouraging. But it did not satisfy the many producers of regular-weight clothes. August was not a good month for men's clothing, although the latter part was fair for boys' wear. War on September 1 caused cloth lines to be opened and withdrawn repeatedly, with every reopening at higher prices. By the end of September, when some of the larger clothing specialists opened 1940 summer and sportswear lines to retailers at minor price advances, buying became heavy and continued so through October. From mid-November until the end of the year, however, clothing business sloughed off appreciably.

SAMUEL FEINBERG.

GAS INDUSTRY. The gas utilities of the United States continued their record of progress and expansion during 1939. Manufactured and natural gas companies, supplying towns and cities with a population of almost 82,000,000, served a total of 17,548,000 customers, representing the largest number of consumers ever connected to

the mains of the industry and an increase of 376,000 over the year 1938. Of these, 10,100,100 were served by the manufactured gas industry and the remaining 7,447,900 were served by the natural gas industry. Revenues of the entire industry, both manufactured and natural, aggregated \$817,137,000, a gain of 5.2 per cent over the preceding year of 1938. The natural gas companies grossed \$449,073,000, a gain of 7.8 per cent for the year, while revenues of the manufactured gas companies were \$368,064,000, as compared with \$360,494,000 in 1938, an increase of 2.1 per cent.

STATISTICS OF THE GAS INDUSTRY

Statistical Department, American Gas Association

	1939 *	1938	Change %
Customers			
Domestic (Incl. House Heating).....	16,491,400	16,140,000	+2.2
Industrial & Commercial.....	1,056,600	1,032,000	+2.4
Total.....	17,548,000	17,172,000	+2.2
Gas Sales (MCF)			
Domestic (Incl. House Heating).....	625,980,000	597,934,000	+4.7
Commercial.....	1,071,297,000	964,062,000	+11.1
Total.....	1,697,277,000	1,561,996,000	+8.7
Revenue (Dollars)			
Domestic (Incl. House Heating).....	\$550,281,000	\$532,045,000	+3.4
Commercial.....	266,856,000	245,029,000	+8.9
Total.....	\$817,137,000	\$777,074,000	+5.2

* Preliminary estimates.

Sales of manufactured gas for domestic uses, such as cooking, refrigeration, house heating, water heating, etc. amounted to 249,367,000,000 cu. ft., an increase of 1.8 per cent for the year. House heating sales, registered a gain of 15.9 per cent. The sales of natural gas for domestic uses registered a pronounced upturn, rising from 352,964,000,000 cu. ft. in 1938 to 376,613,000,000 cu. ft. in 1939, a gain of 6.7 per cent. Sales of natural gas for industrial purposes rose from 589,398,000,000 cu. ft. in 1938 to 655,389,000,000 cu. ft. in 1939, an increase of 11.2 per cent. Sales of manufactured gas for industrial purposes showed an even greater upturn rising from 47,398,000,000 cu. ft. in 1938 to 55,645,000,000 cu. ft. in 1939, an increase of 17.4 per cent.

THE MANUFACTURED GAS INDUSTRY

Statistical Department, American Gas Association

	1939 *	1938	Change %
Customers			
Domestic.....	9,369,300	9,248,000	+ 1.3
House Heating.....	261,700	227,000	+15.3
Commercial.....	423,500	421,000	+ 0.6
Industrial.....	36,400	36,000	+ 1.1
Miscellaneous.....	9,200	9,000	—
Total.....	10,100,100	9,941,000	+ 1.6
Gas Sales (MCF)			
Domestic.....	193,830,000	197,052,000	- 1.6
House Heating.....	55,537,000	47,918,000	+15.9
Commercial.....	55,599,000	54,032,000	+ 2.9
Industrial.....	55,645,000	47,398,000	+17.4
Miscellaneous.....	1,979,000	2,244,000	—
Total.....	362,590,000	348,644,000	+ 4.0
Revenue (Dollars)			
Domestic.....	\$257,523,000	\$258,357,000	- 0.3
House Heating.....	36,026,000	31,030,000	+16.1
Commercial.....	47,419,000	46,718,000	+ 1.5
Industrial.....	25,803,000	22,855,000	+12.9
Miscellaneous.....	1,293,000	1,534,000	—
Total.....	\$368,064,000	\$360,494,000	+ 2.1

* Preliminary estimates.

Preliminary estimates indicate that the total production of natural gas in 1939, including

amounts used in the manufacture of carbon black and for field purposes, reached a total of 2,200,000,000,000 cu. ft. Approximately 192 billion cubic feet of natural gas were used as fuel for generating electric power in 1939. This was an increase of nearly 13 per cent over the previous year.

THE NATURAL GAS INDUSTRY

Statistical Department, American Gas Association

	1939 *	1938	Change %
Customers			
Domestic (Incl. House Heating).....	6,860,400	6,665,000	+ 2.9
Commercial.....	543,900	524,000	+ 3.8
Industrial.....	43,600	42,000	+ 3.8
Total.....	7,447,900	7,231,000	+ 3.0
Gas Sales (MCF)			
Domestic (Incl. House Heating).....	376,613,000	352,964,000	+ 6.7
Commercial.....	110,541,000	100,951,000	+ 9.5
Industrial.....	655,389,000	589,398,000	+11.2
Electric Generation.....	192,144,000	170,039,000	+13.0
Total Ind. & Elec. Generation.....	847,533,000	759,437,000	+11.6
Total.....	1,334,687,000	1,213,352,000	+10.0
Revenue (Dollars)			
Domestic (Incl. House Heating).....	\$256,732,000	\$242,658,000	+ 5.8
Commercial.....	50,500,000	47,240,000	+ 6.9
Industrial & Electric Generation.....	141,841,000	126,682,000	+12.0
Total.....	\$449,073,000	\$416,580,000	+ 7.8

* Preliminary estimates.

Gas companies continue to inaugurate more favorable rates for house heating through central plant burners and equipment. It is estimated that the total number of such installations connected to the lines of all United States gas companies in 1939 amounted to 900,000. In addition there were approximately 1,600,000 dwellings heated by unit heaters, space heaters, floor furnaces, etc., giving a total of more than 2,500,000 homes in the United States heated by gas.

The use of gas for commercial and industrial purposes throughout the country is growing rapidly in volume. New outlets are presenting themselves in this branch of the industry. Recent marked changes in materials which go into dwelling structures calling for more use of structural steel, glass, brick, synthetic stone, metalized wood, fabricated steel, and concrete in home construction are resulting in a correspondingly greater demand for use of gas in the production of these products.

In the field of industrial utilization new processes have been developed and equipment with improved efficiencies have come into general use. For example, a few years ago there was a distinct trend in the larger newspaper offices of the country toward melting type metal by electricity for stereotyping and other purposes. Through the American Gas Association's co-operative research with manufacturers, methods were developed which have resulted in a general acceptance of gas heat for these purposes.

For the fourth consecutive year the gas industry has sponsored a national co-operative advertising programme, the objective of which is the promotion of gas as a modern, efficient fuel for household, industrial, and commercial purposes for which heat is required. Sentiment for the programme is stronger now than at the beginning. Gas utility companies in all parts of the country are co-operating with an "All-gas" Demonstration Home Programme. More than 30 of such demonstration homes have been constructed

throughout the nation, and it is expected that additional homes will be built during the coming spring.

On Aug. 1, 1938 the American Gas Association set up "Certified Performance Requirements" to identify gas ranges that excel competitive equipment in cooking performance. Since that time 25 range manufacturers have produced more than 400 models of gas ranges meeting these requirements and more than 100,000 of such ranges have been placed in American kitchens. This new buying guide for modern cooking appliances has also had the effect of increasing the number and raising the quality of other gas ranges sold. Total gas range sales during 1939 were approximately 30 per cent higher than the previous year and more than 80 per cent of these ranges were equipped with oven heat controls. The Association of Gas Appliance and Equipment Manufacturers reports substantial increases in the sale of every major type of gas appliances and equipment during 1939.

PAUL RYAN.

GASOLINE. See PETROLEUM.

GATES, MILO HUDSON. An American Protestant Episcopal clergyman, died in New York, Nov. 27, 1939. Born in Gardner, Mass., June 29, 1866, he was educated at Amherst College (A.B., 1886; D.D., 1930) and at the General Theological Seminary (B.D., 1889). A deacon in 1889, he was assigned as assistant minister at the Church of the Ascension in New York, and two years later was ordained a priest. In 1892 he was assigned to the Church of the Ascension in Ipswich, Mass., as rector and in 1899 transferred to St. Stephen's Church at Cohasset, Mass. Brought to New York City in 1907 as vicar of the Chapel of the Intercession, Trinity Parish, he remained there until 1929, when he was appointed dean of the Cathedral of St. John the Divine.

While at Intercession, Dr. Gates built a new church and also wrote a *History of the Church of the Intercession*. In 1913 he was elected Bishop of Cuba but refused the honor, and in 1920 he was offered the deanship of St. John's Cathedral, Denver, but again refused the honor. A high churchman, he headed the Sanctity of Marriage Association which worked to prevent Episcopal priests from marrying divorced persons and he himself said that he had never officiated at such a marriage and never would. His interest in Belgian music led to his effort to familiarize Americans with the art of carillon music, for which service he received the Order of Leopold from the Belgian Government.

Active in the work of his diocese and his church, Dr. Gates served as a director of the Church Life Insurance Corporation, and of the Church Pension Fund, and was a trustee of the Home for Old Men and Aged Couples, of St. Luke's Home, and of the House of the Holy Comforter. He was a member of the Joint Commission of the Protestant Episcopal Church on Revision and Enrichment of the Book of Common Prayer, which after 15 years finished its task in 1929. He wrote a monograph on "Mozarabic Liturgy" and advocated the restoration of the Apocryphal books of the Bible.

GEARING. See MACHINE DEVELOPMENTS.

GENERAL EDUCATION BOARD, THE.

An institution incorporated by an Act of Congress in 1903, with the stated object of promoting education within the United States of America, with-

out distinction of race, sex, or creed. The total amount received by the Board in gifts and the accretion thereof, exclusive of income from investments, was \$179,756,000. The Board is empowered to expend the principal as well as the income from these funds. The present programme is restricted largely to three types of work: (1) the support of research and experimentation in relation to the problems presented in the field of general education, i.e. the secondary school through the junior college level; (2) the continuance of the existing programme in the Southern States; and (3) a programme, now coming to a close, in child growth and development. At the end of the year 1938 the Board's unappropriated assets amounted to \$23,907,761, of which the major portion was definitely earmarked for programmes already undertaken, leaving a free balance of about \$8,336,000.

During the year ended Dec. 31, 1939, appropriations approximating \$3,814,000 were made by the Board. Some of the larger of these were as follows: To the American Council on Education, \$442,000 for the work of its Commission on Teacher Education, \$373,480 for the programmes of its American Youth Commission, \$95,000 for its general expenses, and \$47,000 for the preparation of materials for the White House Conference on Children in a Democracy; to the Progressive Education Association, \$105,905 for its service programme; to Ohio State University, \$165,000 for support of a study of school broadcasting; to the Art Institute of Chicago, the Buffalo Fine Arts Academy, the Cleveland Museum of Art, the Milwaukee Art Institute, and the Museum of Modern Art, New York City, a total of \$89,300 to further co-operation of these institutions with secondary schools; to the American Association of Junior Colleges, \$25,000 for a study of terminal education at the junior college level; to the National Association of Secondary School Principals, \$24,600 for a study of occupational adjustment; to Teachers College, Columbia University, \$32,800 for a programme of science teaching of the Bureau of Educational Research in Science; to Bennington College, \$58,700 for a study of their experience in the field of general education for their guidance and that of other colleges.

To the Southern Association of Colleges and Secondary Schools, \$50,000 for a study by its Commission on Curricular Problems and Research; to the State Department of Education of Virginia, \$36,600 toward support of a co-operative project for the revision of the State high school curriculum; to the University of North Carolina, \$47,000 for agricultural research at North Carolina State College of Agriculture and Engineering; to Duke University, \$45,000 for studies of industrial problems related to the economic development of the South; to Clemson Agricultural College, \$25,300 for a study of the place of small-scale enterprises in the social and economic development of the rural South; to the University of the South, \$25,000 for repairs, furnishings, and general equipment for the science building and for laboratory equipment; and to the University of Mississippi, \$25,000 for books and periodicals for the library; for the salaries and travel expenses of state agents for rural schools for Negroes in the Southern States during 1939-40, \$140,000; to the Board of Control of the State Institutions of Higher Learning of Florida, \$35,000 for constructing and equipping a library building for Florida Agricultural and Mechanical

College for Negroes; to Meharry Medical College, Nashville, Tennessee, \$160,000 for current expenses of the Medical School and Hospital; to the University of Chicago, a final grant of \$75,000 toward the support of instruction of Negroes in the clinical branches of medicine in Provident Hospital; to Fisk University, Nashville, Tennessee, \$53,000 for current expenses while endowment is being raised.

The executive officers of the General Education Board during 1939 were: John D. Rockefeller, Jr. (to Apr. 6, 1939) and Ernest M. Hopkins (from Apr. 6, 1939), Chairman of the Board of Trustees; Raymond B. Fosdick, President; Albert R. Mann, Vice President; William W. Brierley, Secretary; Edward Robinson, Treasurer; George J. Beal, Comptroller; Thomas M. Debevoise, Counsel; Chauncey Belknap, Associate Counsel; Albert R. Mann, Director for Southern Education; Robert J. Havighurst, Director for General Education. The offices of the Board are at 49 West 49th Street, New York City.

GENERAL LAND OFFICE. The General Land Office was created by Congress in 1812 for the survey and disposal of the public land. It was at first under the Treasury Department as a real-estate agency selling the public domain to pay the debts of the Revolution. The public domain or original public land included all the States west of the Ohio and Mississippi Rivers except Texas, but today it comprises in addition the States of Alabama, Florida, and Mississippi, besides the Territory of Alaska.

The work of the General Land Office is to survey and manage the public domain. It receives and adjudicates applications for lands, grazing and mineral leases, rights-of-way, etc., and records the disposition or status of lands. These operations are conducted in accordance with the principles of conservation and are designed to secure the prudent use of the lands.

The General Land Office is a hall of records in the disposition of the public domain. Its 4300 tract books contain the base title record or status of every 40-acre tract in 76 per cent of the United States proper. These tract books are the index to the millions of original record files of applications for public land.

The public land activities are largely confined to the 11 westernmost States, the Dakotas and Alaska. Here the General Land Office maintains 25 district land offices and 12 public survey offices for the convenience of the public. Its Cadastral Engineering Service performs practically all surveys for title purposes within the original public domain for the various Federal bureaus and departments. The mapping division revises and issues the official map of the United States and maps of the public land States. During the fiscal year ended June 30, 1939, field projects were carried on in 24 States, the Territory of Alaska, and in the District of Columbia, under 220 separate groups, 111 of which in 17 States were resurvey projects. A total of 36,249 miles was surveyed and resurveyed, embracing 5,992,000 acres, in addition to engineering investigations, miscellaneous surveys, and special projects which are not measurable on a quantity basis. There were accepted and placed on file plats representing 1,444,180 acres of original surveys of public lands, and, in addition, 1,914,355 acres of lands resurveyed, comprising an aggregate area of 3,358,535 acres. There were sold 6421 photolithographic copies of township plats, for which \$3210 was received;

and 9756 copies were furnished other Bureaus for official use.

Despite its increased responsibilities, activities of the General Land Office were conducted at a profit, the total receipts during the fiscal year amounting to \$7,756,288. This was nearly four times the amount of expenditures for its operation.

With the enactment of the Taylor Grazing Act in 1934, new fields of activity were placed within the General Land Office for administration. Under that act, and in accordance with the provisions of Executive orders, all public lands were withdrawn from disposal. No allocation of any of the public domain may now be made until after scientific classification to determine the highest use to which it can be put.

Regulation of grazing on the vacant and unreserved public lands formed an important feature of the conservation work. This was accomplished by the issuance of leases under Sec. 15 of the Taylor Grazing Act. While the primary object sought was the control of grazing, the leases during the fiscal year produced a revenue of \$137,365.

There were outstanding on June 30, 1939, 5051 mineral leases, permits, and licenses covering 5,780,701 acres. There were also outstanding 4190 leases other than mineral, embracing 6,916,900 acres. There were made during the year 686 original entries and selections, embracing 301,740 acres. This figure includes 150,749 acres selected for the California State Park system. There were also made 3948 final entires and selections for 1,198,080 acres. Patents and certificates issued for 5687 entries and selections having a total area of 3,281,224 acres. This figure includes 1,298,790 acres of school section land, patented to the State of Montana under the act of June 21, 1934. A total of 1,441,472 acres was patented during the year with a reservation of mineral in some form to the United States. The total area patented, as of the close of the fiscal year, in which mineral in some form was reserved aggregates 45,087,270 acres.

There were furnished during the year 43,744 certified and uncertified copies of papers, plats, field notes, patents, etc., for which there were received amounts aggregating \$12,348. In addition, there were furnished for official use by this and other departments and agencies, 27,938 copies of such items.

FRED W. JOHNSON.

GENETICS. See BOTANY.

GENGHIS KHAN, REMOVAL OF CASKET OF. See MONGOLIA under *Inner Mongolia*.

GEOGRAPHICAL SOCIETY, AMERICAN.

An organization founded in 1852 and today the leading institution in the United States devoted primarily to the promotion of geographical research. At its headquarters in New York City the Society maintains a research staff engaged in original investigations and in the preparation, editing, and publishing of books, maps, and a quarterly journal. The scholarly and scientific quality of these publications is generally recognized and may be attributed, in part at least, to the fact that the Society possesses what is probably the richest collection of selected geographical books and maps in the country (open to the public). The Society encourages such exploring expeditions as seem likely to yield valuable discoveries in geography and related sciences and co-operates

with other institutions with respect to the geographical aspects of their research and exploration projects. It participates in numerous studies that have wide practical application and that represent the fulfillment of its obligation as a national institution to concern itself with the national welfare and the problems of society. Lectures by distinguished explorers or geographers are sponsored annually and important contributions to the development of geography are recognized through elections to honorary and corresponding memberships and the bestowal of medals.

The Society's outstanding project of research during the past 19 years has been the compilation and publication of a 107-sheet map of Hispanic America, conforming to the International Map of the World on the scale of 1:1,000,000. This great undertaking is now approaching completion.

The Society awarded three gold medals during 1939: the Cullum Geographical Medal to Professor Emmanuel de Martonne of the University of Paris, for his contributions to physical and regional geography; the Charles P. Daly Medal to Professor H. J. Fleure of the University of Manchester, England, for his studies in human geography; and the David Livingstone Centenary Medal to John R. Rymill, Leader of the British Graham Land Expedition of 1935-37, for explorations in the Antarctic and in Greenland. Sir Wilfred Grenfell, Henri Baulig (a French geographer), and Giotto Daielli (an Italian geographer and explorer) were elected to Honorary Membership, and five other distinguished scientists were made Corresponding Members during the year.

In the Society's quarterly journal, *The Geographical Review*, important articles appeared in 1939 dealing with such varied subjects as: "The Littoral of Pacific Colombia and Ecuador," "The Geographical Regions of Palestine," "Hurricanes into New England: Meteorology of the Storm of September 21, 1938," "Sea to Sahara: Settlement Zones in Eastern Algeria," "Post-War Locational Changes of British Industry," "Hunting Boundaries with Car and Camera in the Northeastern United States." A new volume, "White Settlers in the Tropics," by Dr. A. Grenfell Price, was added to the Society's *Special Publications* early in 1939, and, at the end of the year, "Environment and Conflict in Europe: Eighteen Basic Maps," with an accompanying pamphlet of text. Early in 1940 the Society will publish another *Special Publication*, "Inner Asian Frontiers of China," by Owen Lattimore.

The Society was represented by W. A. Wood, Head of the Department of Exploration and Field Research, on two expeditions: The Cabot Colombian Expedition to the Santa Marta mountains in the spring of 1939, and the Third Wood Yukon Expedition, to the St. Elias Range, Yukon, Canada, in the summer. Maps based on air surveys made during these explorations are being constructed at the Society with the aid of new techniques developed by O. M. Miller, Head of the Department of Mathematical Geography.

The president of the Society in 1939 was Roland L. Redmond, and the director, Dr. John K. Wright. Headquarters are at Broadway and 156th Street, New York City.

GEOGRAPHIC SOCIETY. NATIONAL. An organization for the "increase and diffusion of geographic knowledge," this Society was founded at Washington, D. C., in 1888, and since 1899 has

been directed by Gilbert Grosvenor, now President.

During its half a century the membership of The Society has grown to an enrollment of 1,100,000 persons, and its official publication, the *National Geographic Magazine*, has become world famous for its beautiful illustrations, comprehensive articles, and accurate maps.

The Society has sponsored more than 100 scientific expeditions, some of which required years of field work to achieve their objectives. For more than fifty years The Society has presented to its membership, in the *National Geographic Magazine*, personal narratives of these and other expeditions, and has amassed more than 300,000 photographs which constitute an unparalleled pictorial record of world geography.

On Jan. 16, 1939, M. W. Stirling, leader of the National Geographic Society-Smithsonian Institution Archeological Expedition to Vera Cruz, Mexico, discovered the oldest dated work of man in the Americas yet brought to light, a Mayan stela bearing a date equivalent to November 4, 291, B.C. Dr. Stirling's account of his find was published in the August, 1939, issue of *The Geographic*. Another outstanding record of archeological achievement appeared in the May issue in which Henry B. Collins, Jr., reported on his discovery of the first traces of the old Eskimo "Thule" culture in Alaska during the National Geographic Society-Smithsonian Institution Expedition to Bering Sea in 1937.

Mr. and Mrs. Wendell Chapman conducted an expedition for The Society during which they made photographs in color of big game animals in their native habitats from Arizona to Canada; these pictures were reproduced in the July *Geographic*. Dr. Maynard Owen Williams, W. Robert Moore, and Luis Marden made an eight-months survey of South America. John D. Whiting visited the volcanic pinnacles in Cappadocia, Turkey, and recorded in color the ancient cone dwellings where early Christian leaders sought seclusion. These pictures were shown in the December, 1939, issue of the *National Geographic Magazine*. In July Lincoln Ellsworth gave an account of his Antarctic expeditions.

Dr. C. W. Gartlein, director of the National Geographic Society-Cornell University three-year study of auroras, reported that he and his corps of assistants at their stations in Ithaca, Hamilton, and Geneva, New York, had clocked and measured the aurora borealis on August 11, 1939. This auroral display, described as the most spectacular in the United States in ten years, was photographed both in natural colors and in motion pictures. Charles Bittinger, the artist who accompanied the National Geographic Society-U.S. Navy Solar Eclipse Expedition to observe the eclipse of June 8, 1937, on Canton Island, completed his paintings of that phenomenon. They were reproduced in color in the *National Geographic Magazine* in July 1939 to accompany an article by F. Barrows Colton on the latest achievements in astronomy.

The year-long survey of an area of some 4,500,000 square miles in the South and Central Pacific Ocean, planned by The Society in co-operation with the University of Virginia and the U.S. Coast Guard, was necessarily postponed after the outbreak of hostilities in Europe.

The Society published in 1939 the first series of Kodachrome photographs of birds. These

natural color camera studies were made by Dr. A. A. Allen, Cornell University.

Two expeditions were announced to study the eclipse of the sun on October 1, 1940. Dr. Irvine C. Gardner, National Bureau of Standards, is to conduct a party to Recife, Brazil, and Dr. Theodore Dunham, Jr., is to lead The Society-Mount Wilson Observatory group to the central region of the Cape of Good Hope Province, South Africa.

The Society published large scale ten-color maps of "Reaches of New York City," "The Atlantic Ocean," "Central Europe and the Mediterranean," and "Mexico, Central America, and the West Indies."

In addition to the *National Geographic Magazine*, The Society has prepared a series of authoritative nature books. In December, 1939, The Society published *The Book of Fishes*, edited by Dr. John Oliver La Gorce. This is the most comprehensive, full-color presentation yet published of the better known species of North America's inland and coastal waters. Another outstanding work in the series is the two-volume *Book of Birds*, edited by Dr. Gilbert Grosvenor and Dr. Alexander Wetmore, the only publication which reveals in full color all the known species of birds of North America, north of Mexico. The most recent addition to The Society's *Contributed Technical Papers* is the monograph "National Geographic Society-U.S. Solar Eclipse Expedition of 1937 to Canton Island" edited in 1939 under the supervision of Dr. Lyman J. Briggs, Chairman of The Society's Research Committee.

President of the Society is Dr. Gilbert Grosvenor. Headquarters are in Washington, D. C.

GEOGRAPHY. See EXPLORATION; GEOGRAPHICAL SOCIETY, AMERICAN; GEOGRAPHIC SOCIETY, NATIONAL; POLAR RESEARCH.

GEOLOGICAL SOCIETY OF AMERICA. See GEOLOGY.

GEOLOGICAL SURVEY. The organic act of Mar. 3, 1879, gave to the Geological Survey the duties of classifying the public lands and examining the geologic structure, mineral resources, and products of the national domain. Additional duties imposed by subsequent legislation included the making of a topographic atlas of the United States, the investigation of surface and underground waters, and the supervision of oil, gas, and other mineral operations on public lands under permit or lease. About \$7,000,000 was made available from various sources for the Geological Survey's work in 1939.

Geologic investigations were continued during the year in a number of metal-mining and oil and gas districts in co-operation with the States, and physiographic and geologic studies were conducted in co-operation with other Federal agencies. With the Public Health Service, for example, the Survey made studies of geologic factors that might have a bearing on the prevalence of tuberculosis in certain southern areas, and, in co-operation with the Coast and Geodetic Survey, an investigation of gravity anomalies. A lexicon of geologic names, containing definitions of more than 10,000 named stratigraphic units in the United States and Alaska, was published during the year as part of the regular series of reports and will serve as an invaluable reference book for educators and students and for persons engaged in the mineral industry.

Topographic surveys, resurveys, or revisions in 1939 covered more than 27,000 square miles of the United States, and in this connection con-

tinuing experiments with the Tennessee Valley Authority proved conclusively that airplane photographs can be used quite successfully in topographic mapping. At this writing the multiplex wide-angle projector is considered the best stereoscopic plotting instrument for compiling maps from aerial photographs. Accuracy is, of course, the first consideration in the making of Geological Survey maps, and accurate maps of certain types of terrain are now being produced from aerial photographs more rapidly and at less cost than from ground surveys.

The prolonged droughts and calamitous floods of recent years have focused attention on the Geological Survey's investigations of the Nation's water supplies, recognition of the value of which is found in larger Federal appropriations and greatly increased contributions from the States, counties and municipalities. Today even the casually informed realize the importance of proper control and utilization of our water supplies, in which the Survey's work plays an important part. During the year 1939, the Survey made available for publication stream-flow records collected at 4165 river-measurement stations; measured periodically the water levels or artesian pressure in about 5000 observation wells; and analyzed 5000 samples of surface and underground waters to determine their suitability for industrial, agricultural, and domestic uses.

In the administration of the Government's public-land work, the Geological Survey contributed its share of advice and supervision. More than 9600 reports were made on land-classification and mineral-leasing matters. Supervision was given to the production of minerals on public lands, Indian lands, and naval petroleum reserves prospected or developed by private capital. As a result of that production the Federal government received a revenue of about \$9,500,000.

The Geological Survey issued 139 reports and miscellaneous publications during the year and distributed more than 100,000 books and pamphlets and 800,000 maps and folios. Its Library, probably the largest on geologic and related subjects in the world, received more than 21,000 new books, pamphlets, and maps.

W. C. MENDENHALL

GEOLOGY. The Geological Society of America and its affiliated societies held the fifty-second annual meeting at the Nicollet Hotel, Minneapolis, Minn., from Dec. 28 to 30, 1939. About 650 members and guests were registered, a number considerably less than the usual registration at such eastern centers as New York City and Washington. During the sessions the presidential addresses of the heads of three societies were given: T. Wayland Vaughan of the Geological Society spoke upon the subject, "Ecology of Modern Marine Organisms with Reference to Paleogeography"; Ralph W. Chaney of the Paleontological Society spoke upon the subject, "Tertiary Forests and Continental History"; while E. S. Moore of the Society of Economic Geologists entitled his paper, "Genetic Relations of Gold Deposits and Igneous Rocks of the Canadian Shield." Because of illness, Max N. Short of the Mineralogical Society was unable to deliver his presidential address.

An unusually long slate of 42 geologists was elected to fellowship in the Geological Society, while Dr. Per A. Geijer, Professor of Geology and Mineralogy at the Tekniska Högskolans,

Stockholm, Dr. Erik H. O. Stensio, Director, Department of Paleozoology of the Naturhistoriska Riksmuseum, Stockholm, and Dr. Felix Andries Vening Meinesz, Professor of Geodesy and Cartography, Universiteit Utrecht, were made correspondents. While election to the associated societies is open to any serious student of geology, fellows of the Geological Society are selected on the basis of attainment in research and publication, and election is considered an honor. The average age of those elected to fellowship in 1939 was 36, the youngest age being 27, and the oldest 49. Because they are more apt to attract attention by publication, geologists connected with universities and surveys are likely to be elected to fellowship at an earlier age than those engaged in mining and petroleum work. In Memoriam, tribute was paid by George F. Kay to the following Fellows, who died during 1939: S. Prentiss Baldwin, Donald C. Barton, Arthur J. Collier, Arthur P. Coleman, William E. Ford, George Herbert Girty, Alfred Harker, Waldemar Lindgren, Wendell Clay Mansfield, Adolf Carl Noe, W. A. Tarr, and J. E. Woodman.

Professor Eliot Blackwelder of Stanford University was elected president of the Geological Society for 1940; Dr. William F. Foshag of the United States National Museum was elected president of the Mineralogical Society, and Professor Carl O. Dunbar of Yale University was voted president of the Paleontological Society; G. F. Loughlin, Chief Geologist of the United States Geological Survey, is head of the Society of Economic Geologists for 1940.

A summer meeting of the Geological Society under the auspices of the Cordilleran Section was held at the University of California in Berkeley from Aug. 8 to 10, 1939. In addition to the Society of Economic Geologists and the Paleontological Society, the Seismological Society of America took part in this meeting in which the papers were largely restricted to Rocky Mountain and Pacific coast titles. A number of excellent field trips were arranged in connection with this program.

Section E (Geology and Geography)

A.A.A.S. This section of the American Association for the Advancement of Science, under the direction of the secretary, Professor Howard E. Meyerhoff of Smith College, held two meetings during the year. The first of these at Milwaukee, Wisconsin, on June 19 to 23 was noteworthy for the participation of the American Society of Agricultural Engineers and the Association of American Geographers with whom soil conservation and land utilization problems were studied. The winter meeting was held in Columbus, Ohio, from December 27 to 29 in conjunction with a number of related societies. During these sessions particular emphasis was placed upon geologic problems of the Ohio Basin, teaching methods in elementary geology, industrial minerals, meteorite falls, the application of mathematics in the earth sciences, and hydrology. Professor Walter H. Bucher of the University of Cincinnati, retiring vice-president, spoke upon "Problems of the Atlantic Ocean." Professor Kirk Bryan of Harvard University is retiring vice-president in 1940, while Dr. Hugh D. Miser of the United States Geological Survey was elected vice-president and chairman of Section E.

Penrose Medal. Prof. William Berryman Scott, of Princeton University, was named by the Geological Society of America as the Penrose Medalist for 1939. The gold medal was presented

on December 29 at the fifty-second annual meeting of the Society in Minneapolis. (For a complete list of Penrose Medalists since 1927 see page 279, *NEW INTERNATIONAL YEAR BOOK*, 1938.) Professor Scott is the eleventh geologist to receive this medal. Born in Cincinnati, Ohio, in 1855 and now retired from active teaching, he was for 50 years Blair professor of geology and vertebrate paleontology at Princeton. In the words of the Committee on the Penrose Medal Award of the Geological Society:

"He is generally regarded as the leading American student of the Tertiary mammal faunas of the western hemisphere, with particular reference to their historical development and migrations. A familiarity with these problems led him also to a fruitful study of the principles of evolution. His many years of exploration of Tertiary deposits in the western United States and collaboration with Hatcher and others in Patagonia have resulted in more than fifty monographs as well as several comprehensive books."

There were no awards of the Penrose Medal of the Society of Economic Geologists or of the Roebling Medal of the Mineralogical Society for "meritorious achievement in mineralogy and allied sciences" for 1939.

International Geological Congress. The Geological Society of London announced that the eighteenth session of the International Geological Congress, which was to have been held in London from July 31 to Aug. 8, 1940, was indefinitely postponed. The invitation to hold the congress in London was accepted by the bureau of the Seventeenth Congress in Moscow in 1937 and was the outcome of a strong desire on the part of the fellows of the Geological Society of London and of British geologists in general to reciprocate the hospitality accorded to them on so many occasions in other countries, and to fulfil the wish that the congress, which last met in Great Britain in 1888, should meet there again. Sir William Bragg, president of the Royal Society, had been elected honorary president of the general organizing committee, and a great amount of effort had already been expended in preparations for what was expected to be an exceptionally well-attended congress. (An account of the proposed excursions and subjects for discussion in connection with the postponed congress is given in the 1938 *NEW INTERNATIONAL YEAR BOOK*, pp. 280-81.)

Women in Geology. That the field of geology is one in which eminent success by a woman practitioner is sufficiently unusual to attract widespread attention was indicated on Apr. 3, 1939, when extensive publicity was given to the merited appointment of Dr. Winifred Goldring as state paleontologist on the staff of the New York State Museum, one of the oldest organizations in American geology. Another indication of the small number of women professional geologists is seen in the list of fellows of the Geological Society of America, where there are only 12 or 15 women, at most 2 per cent, in a total of about 750. No figures are available for botany and zoology, the sister natural sciences of geology, but it seems probable that women occupy a place more nearly commensurate with their ability in these fields.

Geology is not the most promising field for women seeking careers in science, and this being true still greater credit is due those succeeding in it. In spite of the small numbers who take up advanced study in geology, opportunities for undergraduate instruction of women are practically as widespread as for men, and the cultural

value of the subject has made it very popular with women undergraduates. Many women showing interest in geology are discouraged from majoring in it by their college professors of geology, who are well aware of the difficulties facing women in this field. Women do, nevertheless, continue to go into and make successes in geology; a considerable number find employment as paleontologists or micropaleontologists with oil companies; others are teachers in colleges and universities, although even in the leading women's colleges men predominate in the geology departments; a small number find employment with museums or State and Federal geological surveys; few, if any, are employed in a geological capacity by mining firms.

It is unnecessary to enumerate universities where women may receive graduate instruction in geology, inasmuch as they are accepted as students in almost every important graduate school in the country. Several women's colleges, among which are Smith and Bryn Mawr, also offer graduate instruction of a high grade in this science.

Appalachian Drainage. Explanations of the transverse southeasterly drainage of the Middle Appalachian Mountains between the Roanoke River in Virginia and the Hudson in New York have undergone an evolution almost as remarkable as that of the drainage with which they are concerned. One of the first scientific explanations was that of Tietze who in 1878 suggested that the streams were older than the mountains and had maintained their courses during mountain uplift; two years later Peschel wrote that such streams as the Delaware, Susquehanna, and Potomac followed pre-existing fracture lines normal to the mountain trends, while in 1882 Löwl ascribed such stream courses to headward erosion through the resistant rock ridges of the Middle Appalachian Mountains.

These earlier suggestions were based on inadequate maps, and W. M. Davis in 1889 was the first to give an explanation of Appalachian drainage resulting from careful investigational study. According to Davis the original drainage of the Appalachians consequent upon uplift of these mountains was to the northwest into the interior of the continent. As a result of widespread downwarping east of the mountains in Triassic times these westward-flowing streams were supposed to have been reversed and to have assumed approximately the positions they now occupy. Davis' hypothesis was not seriously challenged until the publication of Douglas Johnson's *Stream Sculpture on the Atlantic Slope* in 1931. Here was set forth a hypothesis completely at variance with Davis; Johnson believes that paired wind gaps and water gaps and the long southeast-trending reaches of the major streams of Pennsylvania and New England can only be explained by assuming a formerly much greater inland extension of the sedimentary beds of the Atlantic Coastal Plain. These sedimentary rocks are believed to have been deposited upon an erosional surface, termed the Fall Zone peneplane by Sharp in 1929, which extended above the present tops of the Appalachians. According to this hypothesis, streams flowing southeastward down the slope of the overlapping Coastal Plain were superposed across the Appalachian structures. In spite of its lack of any apparent possibility of direct proof, this hypothesis of regional superposition has gained widespread acceptance, and it is probable

that Johnson's application of it to the former course of the Hudson in northern New Jersey will become a geological classic, not subject to any major changes in the future.

The absence of any geologic evidence to substantiate Johnson's explanation of Appalachian drainage has been raised as an objection to it and has stimulated search for an alternative hypothesis. At least two later hypotheses have appeared. Meyerhoff and Olmstead have stated their belief that the present Appalachian drainage dates back to Permian times, and that the antiquity of many modern streams entering the Triassic Lowland can be proved by correlation with Triassic conglomerate deposits. They account for the original southeastward direction of stream flow by assuming that the Permian regional divide was much farther to the northwest than is usually believed, and explain the lack of stream adjustment to structure by means of superposition from overturned folds and overthrust blocks and by ordinary drainage evolution in a region of folded mountains. Mackin has attacked the Meyerhoff-Olmstead hypothesis with cogent arguments. More recently Henry D. Thompson has explained the course of the Hudson through the Highlands and of other streams farther south by headward erosion and capture, in the case of the Hudson along lines of weakness, elsewhere due to tilting which increased the gradient of the eastward-flowing streams.

One thing is certain, if water falls upon a region of folded mountains, it will find a way to the sea, even though some advocates of the various hypotheses seem occasionally to think it would be there yet if it had not escaped according to their favorite explanation. Much remains to be studied in the problem of Appalachian drainage evolution, and it seems probable that much more may be done with a hypothesis which considers each stream as an individual developing in accordance with normal laws of folded mountain evolution. Like the lives of human beings the life of each stream would then be seen to follow the same general pattern, but the detailed variations would be infinite.

Geology on the Air. Geologists have never been much interested in publicity, but they have always been interested in education. Within recent years it has become apparent that the Geological Society of America, as the largest independent foundation of its kind in the world, had a responsibility as well as a great opportunity for keeping the public enlightened concerning the present status of the earth sciences. This has been and is being done by means of carefully edited releases to the press on such discoveries and advances as are of significance and of greatest popular interest. The radio was first used for this purpose in connection with the Fiftieth Anniversary of the Society in December, 1938. The first two trial addresses were so favorably received that arrangements were made for broadcasting eight 15-minute addresses over the National Broadcasting Company network in the spring of 1939. These were on subjects of outstanding geologic interest and timeliness and were prepared by recognized authorities. The scripts were later bound into pamphlet form for distribution by the Geological Society; they make delightful and instructive reading, and since their subjects indicate some of the more important lines along which geologists are working at present, their titles and authors are indicated as follows:

"Submarine Canyons," by Paul A. Smith, U.S. Coast and Geodetic Survey; "Shifting Ocean Levels," by Douglas Johnson, Columbia University; "Origin of Mountains," by Chester R. Longwell, Yale University; "Deep Earthquakes," by L. B. Slichter, Massachusetts Institute of Technology; "The Role of Minerals in the Present International Situation," by C. K. Leith, University of Wisconsin; "Geology in Engineering," by Charles P. Berkey, Columbia University; "Geology in the Search for Metals," by Donald H. McLaughlin, Harvard University; "Geology in the Search for Petroleum," by William B. Heroy, Houston, Texas; and "New Uses for Old Minerals," by Edward H. Kraus, University of Michigan.

Walther Penck's Geomorphology. For the meeting of the Association of American Geographers in Chicago, December, 1939, O. D. von Engeln of Cornell University arranged a symposium upon the geomorphic teachings of Walther Penck. Unfortunately Penck's ideas are poorly understood by American and perhaps by all geologists; not only is it true that few Americans have read his *Morphologische Analyse*, for which there exists no English translation, but even geologists, whose native tongue is German, are forced to admit that the German used in it would have aroused Mark Twain's profane admiration. The language obscures Penck's meaning to such an extent that one may well doubt whether his ideas were not equally obscure in the author's mind. Part of this obscurity may be due to the editing and publication of the book a year after Penck's death. A long and valuable review of *Die Morphologische Analyse* with which few seem to be acquainted was written by Isaiah Bowman for the *Geographical Review* in 1926. Penck's ideas seem to have been rejected by most American students, perhaps on too little evidence, and it seems probable that the chief value of the Chicago symposium may have been to cause a renewed searching and testing of our geomorphic tenets which may rely too much upon the power of Davis' great reputation. It is to be hoped that some one well-acquainted with Penckian and Davisian teachings will go to the labor of preparing a long and detailed analysis of the former, so that his colleagues can learn what it is all about.

The Geologist and Political Geography. In these years of changing frontiers, when iron and coal and petroleum are as necessary to the survival of national units as wheat and beef and sugar, great public interest has been aroused in the related subjects of strategic minerals and international boundaries. While bordering on many fields of learning these subjects are usually accepted as being particularly within the province of geography. It should be pointed out, however, that the geologist is peculiarly fitted, because of his training, to arrive at a correct and fundamental understanding of them. While consideration of the earth is now frequently omitted from some subjects called geographic, it is one of the most important factors when the location of mineral deposits and international frontiers is discussed. Through his understanding of the mode of occurrence of mineral deposits the geologist finds it easy to remember the mineral deficiencies of any country. He knows instantly, knowing the geology of Norway, that oil and coal will not be found there. From his knowledge of landforms he is able to visualize and understand the natural boundaries of any country and the topography of strategic significance within them. Knowing that the southern coast of Finland is a peneplaned pre-Cambrian area sloping gently southward beneath the waters of the Gulf of Finland, he can picture perfectly its many islands and irregularities and

its relationship to the Estonian coast developed upon Paleozoic rocks overlying the Finnish peneplane. Knowing that the interior of Finland is a heavily glaciated peneplane on pre-Cambrian rocks, he sees vividly the bewildering number of lakes, swamps, morasses, bogs, and rivers, which make it an easy country to defend. He knows why Bohemia is a great natural fortress also easy to defend. Such examples could be multiplied indefinitely, but it must be apparent that few will have a better background for discussing strategic minerals and the strategic importance of topography than one well-trained in geology. Not only are almost all experts upon strategic minerals geologically trained, but some of the best work upon the influence of topography upon strategy and in the field of historical geography as well has been done by geologists.

Bibliography. Although selection may be invidious, the following publications appearing during 1939 seem particularly worthy of mention:

Geomorphology, by Armin K. Lobeck (New York, McGraw-Hill, 1939). The unusual and superb selection of photographs, drawings, maps, and diagrams illustrating this textbook makes it one of the most original and stimulating ever to be written by an American geologist, and it is at present the outstanding textbook of geomorphology in the English language. About two-thirds of the book consists of illustrations which can be perused by few people, even though they be professional geologists, without profit. Its use of the title, *geomorphology*, indicates an increasing tendency toward the discarding of the term, *physiography*, to designate the study of landforms.

Geology and Engineering, by Robert F. Legget (New York, McGraw-Hill, 1939). The author of this book is an engineer with an additional background of geological training. The high praise which it has received from professional engineering geologists indicates that it will fill a very important place in the training of geologists and civil engineers. It is characterized by an abundance of illustrative cases showing the application of geology to engineering problems drawn from all parts of the world.

Principles of Sedimentation, by W. H. Twenhofel (New York, McGraw-Hill, 1939). This invaluable text and reference work is an outgrowth of the author's earlier *Treatise on Sedimentation*. Emphasis is placed on sediments as products of environment, and those factors of environment having major influence on the production, transportation, deposition, and modification of sediments are considered in detail.

A Source Book in Geology, by Kirtley F. Mather and Shirley L. Mason (New York, McGraw-Hill, 1939). This is one of the series of *Source Books in the History of the Sciences* and gives a comprehensive view of the development of geological science through the last four centuries by presenting excerpts from the writings of 130 men who have molded geological thought in their time. Many of these excerpts have been translated from foreign languages; no material from living authors has been included. It makes tremendously interesting and instructive reading.

Geology and Allied Sciences. A Thesaurus and a Coordination of English and German Specific and General Terms. Part 1, German-English, by Walther Huebner (New York, Veritas Press, 1939). This, one of the most convenient and useful German-English geological dictionaries that the writer has ever seen, contains more than 25,000 terms in geology and the allied fields of botany, biology, chemistry, physics, geography, meteorology, and zoology.

Atlantic Submarine Valleys of the United States and the Congo Submarine Valley, by A. C. Veatch and P. A. Smith (New York, Geological Society of America, 1939). The sonic depth finder has enabled submarine topography to be mapped far more precisely than ever before, and no part of the continental shelves of the world has been more extensively mapped by this method than that of the eastern United States. This paper is a discussion of the charts constructed from these soundings, with particular reference to the striking submarine "valleys," whose origins are still in dispute. The authors lean toward a subaerial erosional origin for the "valleys," in spite of the tremendous geologic difficulties in such an explanation.

Adirondack Igneous Rocks and Their Metamorphism, by A. F. Buddington (New York, Geological Society of America, 1939). This important study has as its major objectives the definition of the character of the igneous

rocks present, determination of the number, age, and origins of the igneous complexes, the understanding of the mechanics of intrusion, and the discrimination of primary magmatic structures from metamorphic features. It is a technical discussion of a classic area for the study of crystalline rocks.

Geology of North America, Volume 1, edited by Rudolf Ruedemann (1927-35) and Robert Balk (1936-39) and containing contributions by 16 American authorities (Berlin, Gebrüder Borntraeger, 1939). This the first of three volumes planned to cover the geology of North America is one of the series of *Die Geologie der Erde*. It contains a general introduction to the geology and geomorphology of the continent, followed by descriptions of the stable shield areas, the Mississippi Valley region, and the Atlantic and Gulf Coastal Plain.

Strategic Mineral Deposits, by G. A. Roush (New York, McGraw-Hill, 1939). This timely book discusses, from the point of view of the United States, the indispensable strategic mineral commodities of which our domestic supply is inadequate. The author, a well known authority, takes up for each metal such subjects as uses, substitutes, reserves, sources of supply, imports, exports, stocks, tariffs, and political and commercial control.

Recent Marine Sediments, a Symposium of 34 papers by 31 authors, edited by Parker D. Traask (Tulsa, American Association of Petroleum Geologists, 1939). This book discusses sedimentation and the environment of deposition, a subject voted as most important to the progress of petroleum geology by over three thousand oil geologists. Observational facts as opposed to theoretical discussions are emphasized.

The Origin of Submarine Canyons, by Douglas Johnson (New York, Columbia University Press, 1939). Much of the material contained in this book appeared in successive issues of the *Journal of Geomorphology* during 1938 and 1939, but it has been revised and now includes references to papers appearing in 1939. The distinguished author discusses all the leading hypotheses to explain submarine canyons and is very loath to accept a subaerial stream erosion explanation for them. He advances as a hypotheses worthy of consideration an origin by submarine spring sapping.

Bulletin of the Geological Society of America, Volume 50, Number 12, Part 2, 1939. Probably no bulletin of the Geological Society of America is looked forward to with more interest or referred to more often than this number containing abstracts of all papers presented at the meetings of the society and its affiliates, the Paleontological Society and Section E, during the year. Here in terse language—each abstract is limited to 250 words—are presented the results of hundreds of investigations. For various reasons some of these results may never appear in longer papers, in which case the abstracts are the only permanent records of them. There is no better place to learn the scope of modern geology than to look through this volume of abstracts.

HENRY S. SHARP.

GEOMORPHOLOGY, WALTHER PENCK'S. See **GEOLGY**.

GEORGE VI. See **CANADA** and **GREAT BRITAIN** under *History*; **DISTRICT OF COLUMBIA**.

GEORGE WASHINGTON UNIVERSITY, THE. A nonsectarian institution of higher learning for men and women in Washington, D. C., founded in 1821. The enrollment for the first semester of 1939-40 was 6493. The enrollment in the 1939 summer session was 1780. The faculty numbered 416.

The program of training in personnel work was expanded, courses being added in Personnel Psychology in the Public Service to supplement those already given which train for personnel work in private business and industrial organizations and in schools and educational organizations.

In the School of Engineering work was added in Naval Architecture and Marine Engineering, together with new courses in Management Problems and Contracts and Specifications, and a seminar in which seniors engage in round-table discussion with leading engineers.

Under the Civilian Pilot Training program of the Civil Aeronautics Authority, ground training and flight training were inaugurated.

The total endowment amounted to \$2,299,551, from which the income of 1938-39 was \$78,903. The total income from all sources was \$1,442,770.

The library contained more than 125,000 volumes. President, Cloyd H. Marvin, Ph.D., LL.D.

GEORGIA. Area and Population. Area, 59,265 square miles; included (1930) water, 540 square miles. Population: Apr. 1, 1930 (census), 2,908,506; July 1, 1937 (Federal estimate), 3,085,000; 1920 (census), 2,895,832. Atlanta, the capital, had (1930) 270,366 inhabitants.

Agriculture. Georgia harvested, in 1939, 10,639,100 acres of principal crops. Cotton, on 1,938,000 acres, made 916,000 bales (estimated farm value, \$41,669,000); corn, on 4,346,000 acres, 36,941,000 bushels (\$24,750,000); tobacco, 127,100 acres, 96,620,000 pounds (\$12,695,000); peanuts, 650,000 acres, 341,250,000 pounds (\$11,261,000); sweet potatoes, 117,000 acres, 8,892,000 bushels (\$7,114,000); tame hay, 1,111,000 acres, 579,000 tons (\$6,369,000); peaches, 4,290,000 bu. (\$6,864,000); oats, 426,000 acres, 8,946,000 bu. (\$3,757,000).

Manufacturing. Establishments manufacturing goods in Georgia numbered, in 1937, 2875 (in 1935, 2834) and employed 159,496 wage-earners (in 1935, 139,650), who received in wages \$110,501,344 (in 1935, \$81,495,168). The products of the manufactories aggregated in yearly value \$708,652,241 for 1937 (for 1935, \$514,655,015) and derived, of this value, \$269,507,109 from processes of manufacture in the State (for 1935, \$187,248,896). The group of industries dependent on the cotton plant led in importance, providing between one-third and one-half of the total manufactured output of 1937; the group included not only the weavers of cotton goods and the spinners of other cotton yarn and thread but also the makers of curtains, draperies, and bed spreads, the producers of knitted cloth and garments, and the dyers of cotton yarns. The cotton-weaving establishments employed somewhat over one-third of the manufacturing wage-earners, paid well over one-third of all Georgia's manufacturing wages to these earners, and produced goods to the value of \$164,173,283, of which \$71,708,022 was contributed by manufacture. The separate output of cotton yarn totaled \$46,929,575. The production of hosiery amounted to \$15,935,089, but in what part cotton and in what part silk and rayon was not specified. Cotton seed was treated and manufactured into oil, cake, and meal to the value of \$27,268,138. Forests supplied another important branch of manufacturing, which yielded \$18,100,369 in lumber and timber products and also \$7,782,587 in separately classified products of planing mills, and \$16,557,756 in turpentine and rosin.

Atlanta had in 1937 20,223, or over one-eighth, of the State's manufacturing wage-earners; its factories produced goods to the value of \$152,704,389, or over a fifth of the State's total. Macon's total of manufactures, for 1937, was \$26,146,400; Augusta's was \$25,824,694.

Mineral Production. As stated in 1939 by the U.S. Bureau of Mines the value of native minerals produced in Georgia in 1937 aggregated \$12,584,060, and the leading products in order of yearly value produced, were stone, raw clay, and clay products. The stone shipped or used by producers totaled 1,465,680 short tons (1938), as against 1,737,760 tons (1937); by value, the totals were \$3,581,319 and \$3,597,039. Parts of the total for 1938 were granite worth \$1,021,939, marble (chiefly monumental) valued at \$1,031,121, and totals for some other sorts of superior stone. Georgia, the leading State in the yearly value of

the production and sale of raw clay, sold in 1937 clay to the value of \$3,548,559. Kaolin, a fine clay used for making china and as a filler for paper, made up all but a trifle of this total. Sales of kaolin in Georgia amounted to \$3,314,918 for 1938 and \$3,546,059 for 1937. The value of the State's output of clay products (exclusive of pottery and refractories) totaled \$2,118,952 for 1937.

The State geologist reported (Nov. 15, 1939) a rich showing of gold, found by men examining the century-old and long unworked Calhoun mine near Dahlonega; work was started in order to determine whether the showing extended into an important auriferous formation.

Legislation. The General Assembly met in regular biennial session in January and adjourned March 19, leaving a record in marked contrast with the legislation of Governor Rivers's first term. Enactments of the previous Legislature had put into effect a series of intended improvements popularly called the Governor's little New Deal; the new Legislature failed to lay taxes needful for meeting an estimated deficit of \$22,000,000 to accumulate in the next two years. A tax at 2 per cent on sales, another at 1 per cent on gross income, and a cumulative tax on chain stores, according to the number in the chain, were all rejected, despite the striving of the Governor's friends.

A new member of the State's government, the State Hospital Authority, was created by statute; its three heads were to direct the construction of a new place of care for the insane, at Milledgeville. The Highway Department received power to issue about \$8,000,000 in bonds, over three years, toward matching Federal grants in aid of the State's road-building; this was done by passing a constitutional amendment to be ratified at the election in June; it opened the way for diverting existing highway funds to divers State expenditures. Permission was granted to increase the number of the State Highway Patrol to 200, from 120. To give effect to a constitutional amendment ratified by popular vote in 1938, an act let counties levy a tax for the medical care of the sick poor. A new State Purchasing Department was created; travel on the highways was allowed to go as fast as 55 miles an hour; the fixing of sentences on criminals was again taken out of the power of judges and was restored to juries; the law on libel was amended so as to give somewhat greater protection to the publisher. Affecting Atlanta, an act did away with the election of the members of the City Council by wards, by requiring that all be nominated at the primaries by the vote of all the city. A constitutional amendment initiated by the Legislature offered aid to the coastal counties in their effort to bring about the enlargement of U.S. Route 1 to a four-lane highway in their territory. In order to discourage authorities from lax granting of licenses for the marriage of young girls below the lawful marrying age, a statute gave girls' parents in such cases the right to sue the grantor of the license for damages. Bearing on the possible taxation of property held by the TVA, an act deprived of their exemption from the tax on property the Federal corporations having proprietary activities.

Political and Other Events. Governor Rivers, failing in his effort to bring the Legislature to create a great addition to the State's revenue, met with a check to his plans for giving State aid on a great scale to activities useful to the

poorer classes. The State faced a heavy operating deficit for the fiscal year ending with June. The State was pledged, by a statute, to pay a sufficient part of the salaries of the 21,000 teachers in the public schools to make good the difference between the means of the school districts and the minimum for teachers' pay through the required yearly length of the term of school. It was feared in March that only a small proportion of the schools could avoid shortening their terms; the payment of the State's part of salary checks was kept up for the time being by money obtained through loans from banks, but it remained likely that the State's guarantee to the public-school system would need a legislative grant of more revenue for its performance, before the expiration of the current biennium. Meanwhile the State retrenched by cutting the monthly total for old-age pensions and the expenditures of divers departments. Later Rivers diverted about \$2,500,000 from the tax on gasoline (earmarked for highways), to use the money for teachers' pay. He removed the Chairman of the Highway Board, W. L. Miller, December 3, and named L. L. Patten in Miller's place.

Governor Rivers, after the failure of his recommendation for a statute to establish a system of civil service for the employees of the State government, issued an order, May 1, putting all appointive posts (about 6500) in the State's governmental organization under such a system; as authority for his course he used a passage of thirteen words in the text of a budget law enacted eight years before. The State's system of unemployment compensation, created in 1937, began in January its function of granting weekly payments of money to persons whose employment in industry ceased. The maximum of payments allowed to applicants was \$15 a week for 16 weeks. Georgia took an active part in the movement among Southern States to obtain from the Interstate Commerce Commission or by act of Congress the removal of excess of the allowed rates of the Southern railroads for carrying freight, over the corresponding rates of the Eastern railroads; a meeting of the Governors of the Southeastern States, for concerting action on this subject, was held in Atlanta at the beginning of March. The State's plan for constructing additions to the mental hospital at Milledgeville, to cost about \$4,000,000, was put in motion in February by the appointment of the three members of the statutory Milledgeville Hospital Authority, which had just been created for the purpose; the fees of 6 per cent of cost, to be paid to the architects in charge of the work, formed the subject of hearings held by members of the lower house of the Legislature in February. A levee at Rome, built at the cost of \$314,000 as a Federal undertaking, to protect the city from inundation by floods of the Coosa River, was finished early in the year. The State's Board of Correction, in control of prisoners, started in Paulding County a special convict camp for the segregation of unruly convicts. See PRISONS.

Atlanta obtained Federal approval opening the way for the construction of the first portion of its projected municipal housing for the poor; this portion was to provide 602 domiciles, in a set of buildings holding 2475 rooms and occupying 30 acres near the previously built poor-housing known as Techwood homes; the cost of this first portion, \$3,300,000, was to be met by a Federal loan of \$3,000,000 and by bonds of the City of

Atlanta for the remainder; the intention was that rents at \$3 a month for the average room should extinguish the debt in 60 years. Atlanta sought an order to prevent the application of the minimum prices set for coal under the Federal Bituminous Coal Act, but suit was dismissed by the U.S. Supreme Court (November 13) with permission to sue later if actual injury to the city should occur.

Officers. Georgia's chief officers, serving in 1939, were: Governor, E. D. Rivers (Dem.); Secretary of State, John B. Wilson; Attorney-General, Ellis Arnall; Treasurer, George B. Hamilton; Comptroller-General, William B. Harrison; Superintendent of Schools, M. D. Collins.

GEORGIA, UNIVERSITY OF. A State institution of higher education for men and women in Athens, Ga., chartered in 1785. The enrollment in the 1939 summer session was 1740 and for the autumn term, 3428. The faculty numbered 201. The productive funds amounted to \$800,000. The library contained 110,000 volumes. During the year buildings to the cost of \$450,000 have been erected. President, H. W. Caldwell, LL.D.

GEORGIAN SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R., on the eastern coast of the Black Sea and north of Turkey in Asia. It includes the Abkhazian Autonomous Soviet Socialist Republic (3400 sq. mi.; capital, Sukhum), the Ajarian Soviet Socialist Republic (1085 sq. mi.; capital, Batum), and the South Ossetian Autonomous Region (1425 sq. mi.; capital, Stalinir). Total area, 26,875 square miles; total population (1939), 3,542,289. Tbilisi (formerly Tiflis), the capital, had 426,300 inhabitants in 1936. The chief agricultural products are tea, grapes, citrus fruits, tung, aromatic plants, eucalyptus, and grain. Manganese is the principal mineral produced (1,650,000 metric tons in 1937), the deposits at Chiatura being one of the most important in the world. Coal and petroleum also are produced. Georgia has numerous manufacturing plants and many others are under construction including a number of electric power stations. See UNION OF SOVIET SOCIALIST REPUBLICS.

GEORGIA SCHOOL OF TECHNOLOGY. An institution for the scientific and technical education of men in Atlanta, Ga., founded in 1888. The enrollment for the autumn of 1939 was 2600 while that in the summer session was 730. The faculty numbered 170. The endowment amounted to \$540,000, and the income from appropriations and fees was \$654,500. There were 43,899 volumes in the library. During the year the Clark Howell, Sr., and George W. Harrison, Jr., dormitories and experiment station building were completed at a cost of \$300,000. President, Marion Luther Brittain, LL.D.

GERMAN-AMERICAN BUND. See FASCISM; DIES COMMITTEE.

GERMAN LITERATURE. German literature has had to combat considerable difficulties during the year 1939. The separation between the literature created outside of Germany, the so-called literature of the emigration, and that written within the confines of the Reich under the supervision of the dictatorship is increasingly manifest. The sale of German language books outside of the limits of the Reich has become an almost insoluble problem, following the seizure of additional German language spheres (Austria, Czechoslovakia) and the outbreak of the war. Within Germany the few remaining literary

magazines, of which the *Neue Rundschau* is still the most representative, are appearing to a lesser degree, the sales possibilities of actual literature have been greatly diminished in favor of "party" literature, the institution of "best seller" has been abolished almost entirely; there are few editions. Of course there are "congresses of writers" (*Dichtertagungen*) (Köpenick, Mar. 30, 1939) and "excursions of writers" (*Dichterfahrten*) into the newly occupied territories; they, however, bear the official party stamp.

Among the large publishers only the Inselverlag has remained true to character and the S. Fischer Verlag still endeavors to maintain a certain literary level. As in previous recent years new authors of standing have been absent. A further growth of literature on the country, such as books about the native land, novels about the peasantry, can be noted, while authors anxiously avoid any discussion of the problems of the present and the problems of the regime.

The Inselverlag devotes itself almost exclusively to classical literature and publishes the works of only a few living authors. First place among the publications brought out by the Inselverlag should be given to the *Volksgoethe* (Popular Goethe) in six volumes and a *Volks-schiller* (Popular Schiller) in three volumes. In addition a complete edition of the works of Adalbert Stifter, comprising seven volumes, a six volume edition of the collected letters of Rainer Maria Rilke, 23 new small volumes of the excellent inexpensive Insel library, as well as a Gottfried Keller biography by Erwin Ackerknecht, may be counted among the achievements of this publisher.

Living authors of rank and name, still residing in Germany, such as Hans Carossa or Hans Fallada or R. Kassner, have published nothing during the past year.

Gerhart Hauptmann has brought out two plays and a collection of early poems, *Aehrenlese* (Gleaning). The plays comprise a comedy on the minnesinger, *Ulrich von Lichtenstein*, and a romantic drama, *Die Tochter der Kathedrale* (The daughter of the cathedral): Two sets of twins are born to two reigning couples, these children being destined to intermarriage with each other. In a fit of anger one of the girls, however, is abandoned by its mother at the altar of a cathedral.

Novels. One of the better known authors, Alexander Lernet Holenia, has submitted a book *Ein Traum in Rot* (A Dream In Red), a political novel on the Soviet terror, a work which appeared before the German-Russian rapprochement. A novel by Joseph Ponten deals with the honeymoon of the painter *Rethel*. Wilhelm Schmidtborn describes the fate of a young meteorologist, *Anna Brand*. Friedrich Schnack's *Cornelia und die Heilkräuter* (Cornelia and the Medicinal Herbs) is the story of a young practitioner. Max Mell's *Steirischer Lobgesang* (Styrian Hymn of Praise), is a novel about the native land. Siegfried von Vegesack *Das Kritzelbuch* (The Scribble Book) is a collection of short stories.

There are many women among the younger authors of novels: Imma von Bodmershof, *Die Stadt in Flandern* (The City in Flanders), the story of a young historian of art; Ruth Solles, *Die Tochter* (The Daughter), the story of a daughter in search of her father; Gertrud Wickenhauer, *Eine Frau für schlechtes Wetter* (A

Wife for Bad Weather), a novel of married life; Geraldine Erben, *Salzburgische Symphonie* (Symphony of Salzburg); Elisabeth Kessel, a novel about *Elisabeth Barret-Browning*.

Additional novels: Bernt von Heiseler, *Die gute Welt* (The Good World), a novel dealing with the peasantry; Anton Dörfler, *Wendelin*; Edgar Maass, *Das grosse Feuer* (The Great Fire).

War novels are *Die Spur* (The Scent) by Roland Ziersch; Brzenk, *Wir jagten den Feind* (We Chased the Enemy); Franz Tumler, *Soldateneid* (Soldier's Oath); Th. Jakob's *Draktverhau* (Abatis of Wire). Hans Leip wrote a nautical novel, *Die Bergung* (Salvage); Carl Hänsel a novel on sports, *Der Letzte Grad* (The Last Grade).

Biography and Essay. Among the biographical and essayistic works the following should receive emphasis: a two volume collection of the works of Rudolf Alexander Schroeder; a biography by Johannes Ebert, *Joseph Haydn*; a collection of Otto Flake's short biographies, *Grosse Damen des Barock* (Great Ladies of the Baroque); a book by Wilhelm Schaefer on the king of the Goths, *Theoderich*; a biographical novel by Moritz Jahn on G. A. Bürger, *Die Gleichen* (The Equals); Oskar Lörke published a collective volume, *Hausfreunde* (Friends of the Family), with essays on Herder, Jean Paul, Ruckert, Stifter, Hugo Wolf, Goethe.

To all appearances lyricism is exhausted. Two not particularly gifted volumes deserve mention: Eberhard Meckel, *Durch die Jahre* (Through the Years); Wolf von Niebeschütz, *Preis der Gnaden* (Price of the Graces).

Science of Literature. The first volume of a large scale work by the historian of literature, J. W. Petersen, *Die Wissenschaft von der Dichtung. System und Methodenlehre der Literaturwissenschaft* (The science of writing: System and theory of method of the science of literature). This work has met with severe criticism because of its unbiased attitude. Others in this field include, H. Oppel, *Die Literaturwissenschaft in der Gegenwart* (The science of literature of the present day), a "party" product; Fr. Panzer, *Der deutsche Wortschatz* (The German vocabulary); R. Buck, *Rousseau und die deutsche Romantik* (Rousseau and German Romantic poetry).

Medicine. Among the literature along popular medical lines a book by the psychiatrist, A. Hoche, *Die Geisteskranken in der Dichtung* (The Insane in Poetic Production), should have special mention, as well as a book of reminiscences by the research scientist on nutrition, Bircher-Beuner, *Vom Werden des neuen Arztes* (Before the Genesis of the New Physician).

Politics. Political literature is very prolific: Baron von Freytag Loringhoven, *Deutschland's Aussenpolitik* (Germany's Foreign Policy); a book by the former Ambassador U. v. Hassell, *Im Wandel der Aussenpolitik* (The Change in Foreign Policy), a work which covers the period from the French revolution to the World War; the official presentation of the conquest of Poland, *Unser Kampf in Polen* (Our Fight in Poland); F. W. v. Örtzen, *Das ist Polen* (That is Poland). The books of two prominent journalists are noteworthy: Otto Kriegk, *Wer treibt England in den Krieg?* (Who drives England into the war?), a presentation of the "war-mongers" Duff-Cooper, Eden, Churchill; and F. Sieburg, *Blick*

durchs Fenster (A Glance through the Window), covering experiences in England and France. Hans Wendt's *Frankreich heute und wir* (France Today and We) constitutes a discussion with France.

Two particular literary groups concentrate their efforts upon the newly conquered territories and the lost colonies. Benno von Arant, *Ein sudetendeutsches Tagebuch* (A Sudeten German Diary); G. Geissler, *Von Metternich bis Sarajewo* (From Metternich to Sarajewo); H. Hinkel, *Judenviertel Europas* (European Ghetto); Anton Steininger, *Rebellen für Deutschland* (Rebels for Germany); Erhard Tewes, *20 Jahre Benesch System* (20 Years of the Beneš System).

Also in this section should be included, E. L. Cramer, *Wir kommen wieder* (We Shall Return), a German book on Africa; E. V. von Rudolph, *Heldenkämpfe in unseren Kolonien* (Heroic Battles in Our Colonies); Ilse Steinhoff, *Deutsche Heimat in Afrika* (German Homeland in Africa), and M. R. Breynne, *Deutsch-Ostafrika ruft* (German East Africa Calls).

Racial Literature. Racial and anti-Semitic literature is very numerous. Among the more important publications emanating from the national-socialist school of thought, the following should be mentioned: W. Gross, *Der deutsche Rassengedanke und die Welt* (German Racial Thought and the World); Walter Pahl, *Weltkampf um Rohstoffe* (World Fight on Raw Materials); O. Schmieder and H. Wilhelmy, *Die faschistische Kolonisation Nordafrikas* (The Fascist Colonization of Northern Africa); H. Wenz, *Das Indische Reich* (The Empire of India); H. F. K. Günther, *Das Bauerntum als Lebens- und Gemeinschaftsform* (Peasantry as a Form of Life and Community); R. Benze, *Die Erziehung im Dritten Reich* (Education in the Third Reich).

Exilic Literature. The most distinguished work which the German emigration has brought forth during the year 1939 is undoubtedly Thomas Mann's great novel, *Lotte in Weimar*, in which Lotte, the love of Goethe's youth, the heroine of *Werther*, meets Goethe once more after a lapse of forty-four years. The book is a love story of metaphysical depth and at the same time a dramatic and most significant analysis of genius. During the year there also appeared from the pen of Thomas Mann an essay, *Schopenhauer*, a political speech, *The Problem of Liberty*, and the first volumes of the new Stockholm complete edition, which will again make the works of this author available to the reading public, works that were confiscated in Vienna and have not since been obtainable.

A new novel by Franz Werfel, *Der veruntreute Himmel* (The Fraudulent Heaven) deals with the fate of an Austrian family of aristocrats and a Catholic maid servant and contains a masterly portrait of the late Pope Pius XI.

In his great novel of the end of the war, *Bürger und Soldaten* (Citizens and Soldiers), Alfred Döblin recalls the year 1918 and the enormous shocks to the Germany of that period.

Klaus Mann in a comprehensive work, *Der Vulkan* (The Volcano), depicts the fate of the émigré in many countries. The book is one of the most stirring dramatizations of the problem of emigration.

A two volume novel by Lion Feuchtwanger, *Exil*, has also been published; the first part bears the title, *Sepp Trautwein*, the second that of *Pariser Nachrichten* (Paris News). This is a

rather vague book, containing much personal gossip—a sort of key novel, which cannot be counted among the best achievements of this author.

Hermann Kesten is the author of the impressive book, *Die Kinder von Gernika* (Children of Gernika), depicting the fate of children in the Spanish Civil War. The gifted young writer Irmgard Keun is responsible for the new novel, *Kind aller Länder* (A Child of All Countries).

After a long pause the third and last part of the significant novel by Robert Musil, *Der Mann ohne Eigenschaften* (The Man without Qualities) has been published. This work must be catalogued among the most significant creations of modern German literature.

The following works should be placed in the category of good novels for entertainment: Gina Kaus, *Der Teufel nebenan* (The Devil Next Door), the love story of a weakling; Adrienne Thomas, *Von Johanna zu Jane* (From Johanna to Jane), a graceful tale of puberty; Carl Zuckmayer, *Herr über Leben und Tod* (Master of Life and Death), the marital adventure of a famous surgeon; Wilhelm Speyer, *Die Stunde des Tigers* (The Tiger's Hour), a novel of boy scouts; Vicki Baum, *Hotel Shanghai*, and Stefan Zweig's first attempt at a novel after a long lapse of time, *Ungeduld des Herzens* (Heart's Impatience), the action of which takes place in the military circles of a small Austrian town in pre-war days.

The last work of the late Joseph Roth, *Die Legende vom heiligen Trinker* (The Legend of the Sacred Drinker) depicts the Paris of our days; it is a work of great poetic beauty. In his novel, *Die ewigen Gefühle* (The Eternal Emotions), Bernard von Brentano analyzes a complicated love relationship.

Of biographical and autobiographical works the splendid *Descartes* by the eminent philosopher, Ernst Cassirer, now on the teaching staff of the University of Göteborg, should receive prominent mention. *Zeitgenössische Bildnisse* (Contemporary Portraits), by Franz Blei, contains 67 essays from Lenin to Franz Kafka. Alma Mahler, the former wife of the great composer and conductor, and now the wife of Franz Werfel, publishes reminiscences and letters to *Gustav Mahler*. Bertha Szeps-Zuckermandl, wife of a prominent Viennese scientist and sister-in-law of Clemenceau, wrote an interesting book of reminiscences, *Ich erlebte fünfzig Jahre Weltgeschichte* (I Witnessed Fifty Years of World History). Annette Kolb describes her trip to the "World of Tomorrow" exhibition in New York and to the great congress of authors, in a charming report entitled *Glückliche Reise* (Bon voyage). In *Hölle im Paradies* (Hades in Paradise), Martin Gumpert gives a self portrayal of a German émigré physician of forty years.

Erika Mann contributes an impressive documentary report on the education of youth in the Third Reich by her *Zehn Millionen Kinder* (Ten Million Children).

Of the scientific works of the German emigration, published in the German language, particular mention should be made of the two volumes entitled *Weltgeschichte* (World History) by the historian, Veit Valentin, now connected with the University in London, as well as of the much discussed work by Sigmund Freud, *Der Mann Moses und die monotheistische Religion* (The Man Moses and Monotheistic Religion), an accomplishment of Freud's advanced years.

The only stage play published is *Der Gärtner von Toulouse* (The Gardener of Toulouse) by Georg Kaiser, who only recently left Germany.

A very fine volume, *Gedichte aus 30 Jahren* (Poems during Thirty Years), includes the most beautiful lyrics by Franz Werfel.

A series of writings entitled *Ausblicke* (Views) is being published in Stockholm; this series contains, in the form of short pamphlets, discussions of German and foreign authors on current problems. Seven volumes were published in 1939. *Das Forum der deutschen Dichtung* (The Forum of German Literature) constitutes a joint foundation of the three leading German publishers in exile. This organization prints the famous works of modern and classical German literature in inexpensive individual editions. It is principally a question of printing banished or forbidden literature: Heine, Schnitzler, Heinrich and Thomas Mann, etc. Seventeen volumes have appeared so far.

Mass und Wert still remains the most representative magazine of the emigration. It is published by Thomas Mann and is now appearing in Zurich for the third consecutive year.

As a natural consequence of the difficult situation in which the émigré publishers find themselves, a large number of German exiled authors witness the publication of their works in a foreign language before the issuance of the German editions. Many of such books have been published in the United States during 1939: Klaus and Erika Mann, *Escape to Life*; a very vividly written *Who's who in the Emigration*; a Johann Strauss biography by H. E. Jacob; *Going, going, gone*, a book of farewell from Austria by Ad. Czernin; a Stevenson biography by R. Berman; *Veronika*, a novel by Georg Kaiser; Ludwig Renn's, *Natural History of War*; an autobiography by Toni Sender; *Heil Hunger*, a report on the public state of health in the Third Reich, by Martin Gumpert, as well as novels by Vicki Baum and Walter Schoenstedt.

MARTIN GUMPERT.

GERMANY. A former Federal republic of Europe, transformed into a centralized, totalitarian state by the National Socialist revolution commencing in 1933. Capital, Berlin.

Area and Population. The area and popula-

GERMANY: AREA AND POPULATION BY STATES

States	Area sq. miles	Population, June 16, 1925	Population, June 16, 1933
Prussia ^a	113,012	38,175,989	39,934,011
Bavaria ^b	29,336	7,379,594	7,681,584
Württemberg	7,530	2,580,235	2,696,234
Baden	5,817	2,312,462	2,412,951
Saxony	5,785	4,992,320	5,196,652
Mecklenburg ^c	6,197	784,314	805,213
Thuringia	4,540	1,609,300	1,659,510
Hesse	2,969	1,347,279	1,429,048
Oldenburg	2,480	545,172	573,853
Brunswick	1,417	501,875	512,989
Anhalt	893	351,045	364,415
Saarland ^d	738	.....	812,030 ^e
Lippe	469	163,648	175,538
Hamburg	160	1,152,523	1,218,447
Schaumburg-Lippe	131	48,046	49,955
Lübeck ^f	115	127,971	136,413
Bremen	99	338,846	371,558
German Reich	181,699	62,410,619	66,030,491

^a Excluding Saarland and including Waldeck, absorbed by Prussia on Apr. 1, 1929. ^b Excluding Saarland. ^c Formed by union of Mecklenburg-Schwerin and Mecklenburg-Strelitz on Jan. 1, 1934. ^d Reincorporated in the Reich Mar. 1, 1935. ^e Preliminary returns of June 25, 1935, census. ^f Incorporated in Prussia, Mar. 31, 1937.



Courtesy of The New York Times

EUROPE AS OF DEC. 31, 1939

The map shows the territorial annexations by Germany in 1938 and 1939; the Anglo-French alliance; the powers guaranteed by Britain and France; Soviet Russia and the nations under her domination; and the Anglo-French naval blockade of the Reich.

tion of Germany proper and its component states at the 1925 and 1933 censuses are shown in the table on page 313, with Saarland (reincorporated Mar. 1, 1935) included.

Subsequent annexations of territories to the Reich up to the end of 1939 are shown in the table on page 315.

The population of Germany proper, Austria, and the Sudetenland was 79,364,408 (preliminary) at the census of May, 1939. The annexation of Bohemia-Moravia, Memel, Danzig, and Western Poland brought the total population to approximately 108,718,408, exclusive of the protectorate of Slo-

vakia. See separate articles on AUSTRIA, DANZIG, CZECHO-SLOVAKIA, MEMEL, and POLAND.

Living births in Germany in 1938 (exclusive of Austria, but including an adjustment for the Sudetenland) numbered 1,346,911 (19.7 per 1000); deaths, 800,571 (11.7 per 1000); marriages, 644,367 (9.4 per 1000). Estimated populations for the chief cities on Jan. 1, 1938, were: Berlin, 4,299,000; Hamburg (Greater), 1,677,000; Cologne (Köln), 765,000; Munich (München), 760,000; Leipzig, 699,000; Essen, 671,000; Dresden, 638,000; Breslau, 623,000; Frankfurt-on-Main, 551,000; Dortmund, 546,000; Stuttgart, 542,000; Düs-

seldorf, 523,000; Hannover, 462,000; Duisburg, 439,000; Nuremberg (Nürnberg), 413,000; Wuppertal, 406,000; Bremen, 341,000; Königsberg, 339,000; Magdeburg, 326,000; Chemnitz, 334,000; Gelsenkirch, 324,000; Bochum, 314,000; Mannheim, 279,000; Stettin, 274,000; Kiel, 250,000; Hal-

GERMAN ANNEXATIONS, 1938-39

<i>Territory</i>	<i>Date of annexation</i>	<i>Area sq. miles</i>	<i>Estimated population</i>
Austria	Mar. 13, 1938	32,369	6,760,000
Sudetenland	Oct. 1, 1938	10,882	3,553,292
Bohemia-Moravia	Mar. 15, 1939	18,158	6,794,000
Memel	Mar. 22, 1939	976	153,000
Danzig	Sept. 1, 1939	754	407,000
German Poland	Sept., 1939	72,000*	22,000,000*
Total		135,139*	39,667,292*

* Approximate.

le, 214,000; Kassel, 208,000. In 1933, 67.3 per cent of the total population was concentrated in towns and cities of 2000 or more. The Jewish population of Germany proper and the Sudetenland dropped from 500,000 in 1933 to about 185,000 on Oct. 1, 1939.

National Defense. See EUROPEAN WAR; MILITARY PROGRESS; NAVAL PROGRESS.

Education and Religion. Primary education is compulsory and there is little illiteracy. The estimated school enrollment in 1937-38 (excluding Austria) was: Elementary, 7,758,307; intermediate, 272,365; "gymnasien" and "realschulen," 670,985; universities and advanced schools, 69,981 (universities 45,989, advanced technical schools 9554, others 14,438). According to the 1933 census, Protestants comprised 62.7 per cent of the total population; Roman Catholics 32.5 per cent; other Christians 0.1 per cent; Jews 0.7 per cent; adherents of other sects 4 per cent. The Jewish population in July, 1939, was estimated at 380,000 as compared with 550,000 in 1933.

Agriculture. The Reich (including Austria and the Sudetenland) had 55,302,000 acres of arable land in 1939; 27,601,000 in meadows and pastures; 2,470,000 in trees, shrubs and orchards; and 42,032,000 acres of forests. Yields of the chief cereals in 1939 were (in metric tons): Wheat, 5,584,500; barley, 4,243,800; rye, 9,380,700; oats, 6,826,900; corn, 379,600 (1938). The 1938 harvest of spelt was 3,814,000 bu.; potatoes, 1,870,038,000 bu.; sugar beets, 15,546,000 metric tons; fodder beets, 38,445,000 metric tons; hay, alfalfa, and clover, 37,222,000 metric tons; hops, 21,867,000 lb.; tobacco, 73,854,000 lb.; wine, 59,967,000 gal. The livestock census, Dec. 3, 1938, (including Austria but not the Sudetenland) showed 26,353,000 swine; 22,507,000 cattle; 5,125,000 sheep; 3,797,000 horses (not including army horses); 2,755,000 goats. The value of farm production in 1938 was (exclusive of Austria and the Sudetenland) 12,600,000,000 marks (plant products, 3,588,000,000; animal products, 7,165,000,000). The agricultural indebtedness was 10,180,000,000 marks on Dec. 31, 1937.

Mining and Manufacturing. The gross value of industrial production was estimated at between 85 and 90 million marks in 1938 (77 millions in 1937). The 1938 output of minerals and metals in metric tons was: Coal, 186,179,000; lignite (excluding the Sudetenland), 194,959,000; iron ore, 3,100,000; lead, 185,300; copper, 70,000; potash (K₂O), 1,968,000 (1937); pig iron (excluding Sudetenland), 18,695,000; steel, 23,208,000; aluminum, 160,000; cadmium, 432,000; zinc, 194,600;

crude petroleum and shale, 552,000. Rayon production (including Austria but not the Sudetenland) was 65,000 metric tons; wood pulp, 2,544,000; paper, 3,536,000. Output of electric energy (excluding Austria and the Sudetenland) totaled 5,500,000,000 kilowatt-hour. There were 352,369 motor vehicles manufactured in 1938 (276,592 passenger cars and 75,777 trucks and buses). The average number of unemployed in all industries was 408,000 in 1938; 912,312 in 1937 and 1,592,655 in 1936.

Foreign Trade. Imports for consumption in 1938 were valued at 5,449,000,000 marks (5,468,000,000 in 1937) and exports of German products at 5,256,000,000 marks (5,911,000,000 in 1937). The trade balance which was favorable by 443,000,000 marks in 1937, thus became unfavorable by 193,000,000 marks in 1938. Nearly half of the 1938 import excess was accounted for by the unfavorable trade balance with the United States.

The value in gold marks of the chief 1938 imports was: Wheat, 149,084,000; butter, 121,262,000; coffee, 147,723,000; fruit, 139,791,000; raw cotton, 219,037,000; wool, 266,683,000; mineral oil, 224,787,000; coal, 69,358,000; copper ore, 20,826,000; timber, 49,904,000; iron ore, 281,458,000. The value of the principal exports was: Coal, 379,482,000; silk and rayon, 16,771,000; woolen goods, 24,113,000; cotton goods, 15,471,000; leather, 26,399,000; paper, 73,031,000; dyes, 150,710,000; pharmaceuticals, 166,802,000; glass and glassware, 66,676,000; iron and steel, 205,084,000; copperware, 57,960,000.

Of the imports, the United States accounted for 454,500,000 marks; the United Kingdom for 309,200,000 marks; Italy, 284,200,000 marks; Sweden, 267,400,000 marks; Argentina, 240,000,000; Brazil, 219,600,000; Netherlands, 208,100,000; Czechoslovakia, 188,800,000; France, 159,100,000; Belgium and Luxemburg, 154,400,000; British India, 151,200,000. Germany's exports were principally distributed as follows: Netherlands, 459,800,000 marks; United Kingdom, 374,100,000; Italy, 349,100,000; Sweden, 275,200,000; France, 229,000,000; Belgium and Luxemburg, 190,400,000; Brazil, 163,200,000; Czechoslovakia, 161,600,000; United States, 157,200,000; Argentina, 152,900,000. See IMPORTS AND EXPORTS.

Finance. Revenue from all Reich taxes for the fiscal year ended Mar. 31, 1939, was reported at 17,712,000,000 reichsmarks (13,964,000,000 in 1938), exclusive of the Jewish Property Contribution of 250,000,000 marks. The 1939 figure includes 300,000,000 marks from Austria for the first quarter of the year. Income, property and sales taxes provided 13,061,000,000 marks; consumption taxes 2,833,000,000, and customs duties 1,818,000,000. No budget figures have been published since 1933. However, a decree issued on Sept. 12, 1939, provided for a supplementary war budget of 15,000,000,000 marks for the fiscal year ending Mar. 31, 1940.

The public debt on Sept. 30, 1939, was officially reported at 35,500,200,000 marks as against 23,827,000,000 on Sept. 30, 1938. These figures were exclusive of large, unrecorded liabilities contracted for public works and rearmament. The foreign debt was estimated at 9,500,000,000 marks in February, 1939 (26,800,000,000 in June, 1930). On Sept. 30, 1939, Germany's central monetary gold reserves totaled \$17,000,000 (old U.S. gold dollars). The average exchange rate of the reichsmark was \$0.4020 in 1937, \$0.4016 in 1938, \$0.4006 in 1939.

Transportation. In 1939 there were 38,107 miles of railways in Germany (including the Sudetenland and Austria). Freight carried totaled 422,333,000 metric tons in 1938; passengers numbered 2,041,700,000. Gross receipts were 5,133,519,000 marks. Highways (1939) covered 174,732 miles (see **ROADS AND STREETS**). Civil aviation statistics for 1938 were: Miles flown, 13,655,887; passengers, 299,000; freight and baggage, 5,306,400 lb.; mail, 12,529,000 lb. The Lufthansa system operated air routes to South America, Asia and various parts of Europe. Air services to Denmark, Sweden, Hungary, other Balkan countries, Greece, and Italy—suspended at the outbreak of the war—were resumed on Oct. 4, 1939. On June 30, 1939, the German merchant marine aggregated 4,687,500 gross tons. During 1938 the net tonnage of vessels entering German ports was 32,868,000 (28,668,000 in 1937).

Government. Under the Enabling Act of Mar. 24, 1933, giving the cabinet unrestricted powers to legislate by decree, dictatorial powers were assumed by Adolf Hitler in his dual capacity as Chancellor (appointed Jan. 30, 1933) and head of the National Socialist (Nazi) party, the only legal political organization. Upon the death of President von Hindenburg, Aug. 2, 1934, Hitler assumed the functions of both Chancellor and President under the title of Leader (Fuehrer) and Chancellor (Reichskanzler). On Oct. 16, 1934, it was officially announced that Hitler would occupy both offices for life. Rights of the former Federal states were abolished by the decree of Feb. 1, 1934. Between 1933 and 1939, the Nazi party progressively brought under its control not only the government and the army but virtually all departments of political, cultural, social, and economic life (see preceding **YEAR BOOKS**).

The cabinet was composed as follows at the beginning of 1939: Fuehrer, Chancellor, and Minister of Defense, Adolf Hitler; Interior, Dr. Wilhelm Frick; Foreign Affairs, Joachim von Ribbentrop (appointed Feb. 4, 1938); Finance, Count Ludwig Schwerin von Krosigk; Food and Agriculture, Dr. Walther Darré; Economic Affairs, Dr. Walther Funk (Jan. 15, 1938); Labor, Franz Seldte; Posts, Dr. Wilhelm Ohnesorge (Feb. 2, 1937); Transport, Dr. Julius Heinrich Dorpmueller (Feb. 2, 1937); Aviation, and Commissioner for the Four-Year-Plan, Field Marshal Hermann Goering; Justice, Dr. Franz Guertner; Science, Education, and Public Instruction, Dr. Bernhard Rust (Apr. 30, 1934); Church Affairs, Hanns Kerrl (July 19, 1935); National Enlightenment and Propaganda, Dr. Joseph Goebbels.

HISTORY

Foreign Relations. Not content with the sensational gains achieved by his diplomacy in 1938 (see 1938 **YEAR BOOK**, p. 290 f.), Hitler pushed rapidly ahead with his drive for European hegemony in 1939. Czecho-Slovakia, emasculated by the loss of her allies and frontier fortifications in 1938, was extirpated on Mar. 15, 1939. German troops occupied Bohemia and Moravia in violation of both the Munich Accord of Sept. 29, 1938, and of Hitler's pledge to Prime Minister Chamberlain of Great Britain that the Sudetenland represented his "last territorial ambitions in Europe." Slovakia became a German protectorate on March 16. On March 22 Lithuania was forced to cede Memel to the Reich under threat of attack. Rumania, likewise in mortal fear of German armed might, on March 23 signed a treaty giving Germany exten-

sive economic rights. On the same day Hitler demanded that Poland (q.v.) surrender Danzig (q.v.) and grant the Reich an extra-territorial corridor across Pomorze to East Prussia.

Hitler's expansionist drive was slowed at this point by growing resistance. Poland, with the rape of Bohemia and Moravia fresh in mind, rejected the Fuehrer's demands. The Poles viewed the proposals as the opening wedge for eventual subjection and partition of their country. Support for Poland was forthcoming from Britain and France. Convinced by the invasion of Czecho-Slovakia that Hitler was determined to dominate Europe at all costs, the Chamberlain and Daladier Governments began to build a "stop-Hitler" coalition. The Franco-Polish alliance was revived. Britain also pledged military aid to Poland against German aggression. Britain and France guaranteed the independence of Greece, Rumania, and Turkey and sought to draw the Soviet Union into their anti-German combination.

Italian and Soviet Pacts. Countering the Anglo-French policy—labelled encirclement in Berlin—Hitler on May 22 concluded a 10-year military alliance with Italy. On August 24 he played his trump diplomatic card and concluded a non-aggression pact with Moscow insuring Russia's neutrality. By this pact Hitler sacrificed the worldwide prestige and support he had built up as the professed defender of European civilization against Bolshevism in the hope that it would shatter the Anglo-French "anti-aggression" front and leave Germany free to deal with Poland single-handedly. However Britain and France stood by their pledges when the German armies on September 1 suddenly invaded Poland. When Hitler ignored ultimatums demanding the recall of German troops from Polish soil, the British and French Governments declared war (September 3). Italy refused to be drawn into the conflict in support of Germany. Japan, which had been considering a military alliance with the Reich, was definitely alienated by the Soviet-German pact.

Poland's armies were decimated by the Germans in a short but bloody conflict, and the remnants were prevented from retreating to the marshes of eastern Poland and there continuing the war by the invasion of Poland from the east by Soviet armies beginning September 17. The Soviet-German treaty of September 29 once more partitioned unhappy Poland between its two great neighbors (see above under *Area and Population*). Supported by Moscow, Hitler then made Britain and France an offer of peace on the basis of recognition of his conquests. When this was rejected Nazi Germany settled down to a life-and-death struggle with the British and French Empires. See **EUROPEAN WAR**.

The German Strategy. In incorporating millions of Czechs and Poles in the Third Reich, Hitler abandoned the policy laid down in *Mein Kampf* of creating a purely German Reich and committed himself to the old German nationalist program of a unified German people dominating as its *Lebensraum* (living room) all Central and Eastern Europe. Through these territorial annexations and through economic accords such as that with Rumania, Germany undertook to reorganize the economy of all Central and Southeastern Europe so that this region would satisfy Germany's need for raw materials and foodstuffs and, in return, provide a larger market for German manufactures.

The primary aim of this economic program was to make the Reich immune to blockade by Anglo-



GERMANY'S PUSH TO THE EAST

Top: Chancellor Hitler inspects his guard drawn up before the historic Hradscin Castle in Prague following the occupation of Bohemia and Moravia and the extirpation of the Czecho-Slovak Republic by German troops on Mar. 15, 1939. *Center:* Hitler, in Memel, receives that Territory back into the Reich after its forced cession by Lithuania (Mar. 22, 1939). *Bottom:* Germans of Danzig hailing Hitler's troops when they occupied the Free City and reincorporated it in the Reich on September 1, at the outbreak of the German-Polish War. Photos from *Wide World*



Brown Brothers

HITLER (front, center) ANNOUNCING GERMAN INVASION OF POLAND IN SPEECH BEFORE REICHSTAG, SEPT. 1, 1939



Brown Brothers

FOREIGN MINISTER JOACHIM VON RIBBENTROP (standing, left), JOSEPH STALIN (beside Ribbentrop) AND PREMIER VIACHESLAV MOLOTOV (seated) SIGNING NAZI-SOVIET TREATY OF SEPT. 23, 1939, FOR THE PARTITION OF POLAND

French sea power, recognized as a primary cause for Germany's defeat in 1918. The imposition of a German economy upon Eastern and Central Europe found its political justification in the Nazi theory that "the Germans constitute a master race that has a mission to rule over inferior peoples and create a new world order." This dogma was reiterated by Dr. Robert Ley, leader of the German Labor Front, in December, 1939. It was supplemented by the Nazi "population war," in which the German state enlisted the procreative powers of its people to increase German numerical predominance over Britain and France and to offset the more rapid increase of the Slavic populations of eastern Europe. The success of this program was evidenced by the rise of the German birth rate from 14.7 per thousand in 1933 to 20.7 per thousand in 1939. The number of Germans born in 1939 was about 1,640,000, a figure more than 300,000 higher than the combined births in Britain and France.

Westwall Completed. In order to hold Britain and France at bay in the west while consolidating German power throughout Central and Eastern Europe, Hitler constructed the great Westwall fortifications from the Swiss border northward along the French, Belgian, and Dutch frontiers. This system, started in the spring of 1938, was virtually completed by the end of 1939.

Nazi World Aims. While undisputed German predominance in eastern Europe was Hitler's first objective, his aims and his policy were worldwide in scope. The likelihood of a Nazi bid for world domination, involving complete revision of the *status quo*, had been forecast by Hitler's creation in 1936 of a Fascist bloc, aimed ostensibly at Soviet Russia. The bloc, which at first included Japan and Italy, was broadened early in 1939 with the adherence of Franco Spain and Hungary. It enabled the expansionist powers to bring simultaneous pressure upon Britain, France, and the United States, with Germany acting in Europe and Latin America, Italy in Africa and the Mediterranean, and Japan in the Far East.

Other indications that Nazi aims collided with British, French, and, in some cases, American interests outside of Europe were the reiteration by Chancellor Hitler on Jan. 30, 1939, of his demands for colonies and greater participation in world trade; open German and Italian support of anti-British elements in Palestine and the Near East and of anti-French elements in French North Africa; the German claim in April, 1939, to 230,000 square miles of Antarctic territory, to be used as a base for German whaling ships; and the frank admission in June that Germany had sent thousands of regular troops, sailors, and airmen to the aid of General Franco in the Spanish civil war. Despite this aid, General Franco remained neutral in the European War.

Germany and Russia. The outbreak of war and the establishment of the Allied blockade made the further development of German economic plans in Southeastern Europe a matter of life and death for the Reich. To secure Russia's neutrality and economic collaboration, Hitler was forced to permit Moscow to take half of Poland and to establish virtual protectorates over the Baltic states—Latvia, Estonia, and Lithuania. The influential German minorities in the Baltic states were uprooted at Hitler's orders, apparently in response to Russian pressure, and were colonized in the territories newly annexed to the Reich from Poland. Hitler also gave Stalin a free hand in Fin-

land, sacrificing important German trade and the friendship of the previously pro-German Finnish army leaders. Once in control of Finland, the Soviet Union could if it wished block Germany's access to vital iron ore supplies in northern Sweden.

The gains accruing to the Reich from these policies up to the end of 1939 did not seem to warrant the sacrifices made to obtain them. Under the German-Soviet friendship pact of September 29, the Reich hoped to obtain in Russia enough foodstuffs and raw materials to offset the effects of the Allied blockade. But the inefficiency of the Soviet transportation system, the unco-operative attitude of some Soviet officials, and the disorganization of the program by the Soviet invasion of Finland all served to minimize the economic aid received from Russia. The first railway shipment of minerals, oils, and grains from the Soviet Union reached Germany at the end of December, although in October it was announced that delivery of a million tons of Russian grain would begin in 10 days. Moreover the ineffectiveness of the Red Army in Finland during December lessened the fear of Allied and neutral countries concerning German-Soviet military co-operation and led the Balkan and northern European countries to stiffen their resistance to German political and economic pressure. The Russo-Finnish war threatened to drag the whole of Scandinavia into the main European conflict, thus cutting off iron ore and other vital German supplies from that region.

Struggle for the Balkans. The Allies scored heavily against both Germany and the Soviet Union in the Balkans when the Anglo-French-Turkish military alliance was signed on Oct. 19, 1939. This move lessened the possibility that Italy would throw in her lot with Germany, and provided the Allies with a base for future land, air, and sea attacks upon German communications with Russian oil fields in the Caucasus. Turkey's subsequent warning that she would go to the aid of any Balkan state attacked by Germany or Russia strengthened those countries in resisting German economic demands. Meanwhile the Allies utilized their superior financial resources to buy up all possible exports of the Balkan countries and to advance credits for armaments and essential supplies. When Rumania and Yugoslavia in November yielded to German pressure and promised the Reich larger shares of Rumanian oil and Yugoslav minerals, the Allies exercised effective counter-pressure by threatening to withhold financial and military aid and to restrict Rumanian and Yugoslav imports from overseas.

Allied competition for the trade of the Balkans increased the shortage of foreign exchange available to the Reich for purchasing raw materials and supplies in neutral countries. The German Government repeatedly warned the Balkan countries that it might be compelled to resort to military occupation if the needed supplies were not forthcoming. Such a step, however, would extend the zone of military operations, permit the Allies and Turks to employ their formidable forces concentrated in the Near East, and might even embroil Germany with Italy and the Soviet Union.

Friction with other Neutrals. The same struggle was carried on between the Reich and its foes in the Scandinavian countries and in Belgium, the Netherlands, and Switzerland. These countries, and particularly Belgium and the Netherlands, were repeatedly threatened with invasion from Germany unless they followed economic and other

policies favorable to the Reich and disadvantageous to the Allies. In pursuing its counter-blockade by submarine, mine, and air against Britain, the Germans waged a destructive warfare upon neutral shipping carrying supplies to British ports. Later even neutral ships bound for neutral ports were indiscriminately attacked and sunk. These policies depicted anti-German sentiment in many neutral countries.

Relations with United States. The steady deterioration of Nazi Germany's relations with the United States, recorded in preceding YEAR BOOKS, continued in 1939. Washington indignantly refused to recognize the annexation of Bohemia, Moravia, and Poland. On April 15 President Roosevelt dispatched a message to Hitler and Mussolini asking them to agree not to violate the independence of a long list of other small countries. Hitler replied in a sarcastic and bitter speech before the Reichstag on April 29, offering to conclude non-aggression treaties with countries professing to fear German aggression. Three small countries—Denmark, Estonia, and Latvia—accepted the offer.

On June 15 Supreme Court Justice Owen T. Roberts, acting as umpire of the German-American Mixed Claims Commission, handed down a final decision in the famous Black Tom and Kingsland munitions explosion disasters in 1916 and 1917. The decision not only held the German Government responsible for the explosions, but declared it guilty of fraud and collusion in the presentation of its case. On the basis of this decision, the commission, from which the German member had withdrawn in April, awarded damages totaling \$50,000,000 to American claimants against the Reich Government. The German press denounced this "monstrous" decision as "devoid of all legality."

American bankers had joined on May 15, 1939, in extending to May 31, 1940, the "standstill" agreement covering German short-term debts. But when this agreement was annulled by the outbreak of war, five New York banks attached local assets of 16 German banking institutions in an effort to collect the sums due them. The German Government during the summer attempted to float an issue of \$73,000,000 of refunding bonds in New York to be distributed in lieu of interest to holders of German bonds in the United States. But its refusal to furnish the Securities and Exchange Commission with "essential information" concerning Germany's financial situation provoked difficulties and registration of the bonds was withdrawn September 18.

The sinking of the British steamer *Athenia* with the loss of American lives, the seizure of the United States ship *City of Flint* by a German commerce raider in October, and the repeal of the United States arms embargo by Congress in November all served to increase tension between the two countries. There was an intensification of the German-American struggle for trade and for political influence throughout Latin America.

Domestic Affairs. The successive diplomatic crises of 1939 and the war that followed upon them all served to spur the further development of the war economy and the totalitarian state which the Nazi party had been building at full speed since 1933. Typical of this trend was a decree issued in April making service in the Hitler Youth organization compulsory instead of voluntary. All boys were obliged to enter the Hitler Youth at the age of 10 and remain under 18, when they were transferred to the Labor Service. In

October all Hitler Youth members were ordered to commence their military training at the age of 16.

Conflict with Churches. The Nazi state also continued its efforts to crush the independence of Protestant and Catholic churches that still resisted National Socialist domination.

A most serious threat to dissident Protestant churches was posed by three decrees issued March 29 by Dr. Friedrich Werner as chairman of the pro-Nazi Supreme Council of the German Evangelical Church. They established the "Fuehrer principle" for the whole Evangelical Church and authorized replacement of pastors unacceptable to Evangelical Church officials. A pro-Nazi minority of a dissident congregation was empowered to choose a pastor other than the one selected by the congregation as a whole. The Confessional Synod replied on May 28 that it no longer considered Dr. Werner's orders as "legally binding."

In June there were dramatic protests by the congregation of Pastor Martin Niemoeller's Berlin church against Nazi efforts to deprive him from his office and oust his wife and children from the parsonage. Niemoeller had been in prison since July, 1937, for his leadership of the Confessional Church independence movement, but his congregation refused to accept another pastor. Ninety-two Confessional Church ministers took part in July in a service commemorating the beginning of the third year of his imprisonment. In September Niemoeller offered to resume his World War services as commander of a German submarine, but the offer was rejected by the government.

After the outbreak of war, the hostility of the Nazi party and government was transferred from the Confessional Church to the Roman Catholic Church. While both Catholic and Protestant churchmen in Germany upheld the righteousness of the German cause, the Catholics were particularly resentful of the Nazi-Soviet rapprochement and the resultant impetus given to anti-religious forces in the Reich. The Pope gave special attention to conditions in Germany in his encyclical of October directed against atheism and religious persecution. In November it was announced in Rome that 687 Catholic monasteries and convents had been closed in Germany in the preceding months. Also see AUSTRIA under *History* for the religious situation.

Economic Trends. It was in the economic field, however, that the war produced the most rigorous application of totalitarian theory and practice. Germany entered the conflict with its economic system functioning at a high rate of activity, but showing signs of growing stress and strain. By the spring of 1939, industrial production and employment had risen far above 1929 levels and a stringent labor shortage had developed. To meet this labor shortage, which was particularly acute on the farms, Germans were recalled from abroad, Italian and Bulgarian peasants were hired for labor in Germany, and in June it was announced that every unmarried German woman under 25 would be conscripted for a year's agricultural labor. A decree of February 13 made conscription the normal method for securing workers for public construction projects and for arms and munitions industries.

The expansion of production was due to enormous expenditures of public funds on rearmament (see ARMAMENTS, COST OF), public works, etc., and to conscription by the state of all the resources of labor, capital, industry, and agriculture. By the

summer of 1939, however, the public debt was growing at an alarming rate. Taxes were approaching the confiscatory level and the amount of currency in circulation was increasing rapidly. "Bottle-necks" were beginning to appear in industry. The railways, electric plants, and many industrial plants were over-worked and their equipment was rapidly depreciating. The labor shortage was matched by a growing scarcity of raw materials. The highly unfavorable trade balance of 1938 lowered the German foreign exchange reserves and threatened to reduce further the vital imports of raw materials needed to keep industry operating. This situation was emphasized by Hitler's statement of January 29 that the Reich must "export or die."

Moreover correspondents in Germany in the months preceding the outbreak of war noted a general feeling of exhaustion as a result of the tension and pressure under which the nation had lived and worked during the preceding six years. There was a marked deterioration in the quality of work performed and in labor discipline. Labor's restlessness under long hours, low wages, and a shortage of wholesome and nourishing food led Marshal Goering to make a tour of industrial plants in July.

War Measures. With the outbreak of war the strain upon all classes of the nation was greatly increased. A rationing system covering all the principal foodstuffs except flour, bread, and potatoes was inaugurated August 28. The War Economy Decree of September 4 required the nation to make immediately sacrifices in terms of consumption, income, and services such as were imposed during the World War years 1915-17. Consumer goods were purchasable only through special permits issued on the basis of each individual's pressing needs. To finance the war a decree of September 1 imposed a drastic increase of taxes, a lowering of wages and prices, a 50 per cent reduction on all public expenditures not directly related to prosecution of the war, and short-term borrowing.

The rapid conquest of Poland and the accord with the Soviet Union enabled Germany to avoid a war on two fronts, and thus to keep the bulk of the nation's man power at work in factories and fields. Only about 3,000,000 men were mobilized for military service as against 10,000,000 in 1914. In addition the Reich conscripted thousands of Czechs and Poles for labor service in Germany. Nevertheless the government changed the normal working day from eight to 10 hours, without additional compensation, in mid-November. In munitions and other special industries 11- and 12-hour days were the rule. However this strain proved so great that it cut labor efficiency. Accordingly a decree of December 12, effective Jan. 1, 1940, restored the eight-hour day as standard and the pre-war system of bonuses and overtime for longer hours was resumed. The strain upon labor and industrial equipment was indicated by the 10 serious railway wrecks, taking 321 lives, that occurred in widely scattered parts of Germany between September 1 and December 23.

Toward the end of the year the government also abandoned the "New Financial Plan," inaugurated May 2, under which the cost of the armament and reconstruction program was to have been spread over many years through the issuance of special certificates anticipating future tax revenue. However no satisfactory substitute was devised for financing the war. Meanwhile the circulation of paper currency had risen steadily from 7,816,000,-

000 marks on Jan. 31, 1939, to 11,798,000,000 marks on Jan. 1, 1940, and the Reichsbank's ratio of gold reserve to outstanding circulation had fallen by the end of 1939 to 0.66 per cent, the lowest on record.

The year end found the German economic machine producing in sufficient quantities most of the goods and articles needed for war, but the supply of consumption goods had been reduced to a point that was not reached in the World War until 1916. All German overseas trade except that in the Baltic was at a standstill. And the Reich remained vitally dependent upon imports of a few crucial commodities, such as oil from Rumania and Russia and steel from Sweden.

Internal Politics. In politics as well as in economics 1939 witnessed a steady trend toward more radical policies on the part of the Nazi party and state. On January 20 Chancellor Hitler dismissed Dr. Hjalmar Schacht, the conservative head of the Reichsbank, and named Dr. Walther Funk, Minister of Economics, to his post. Dr. Funk was instructed to transform the Reichsbank "into a German bank of issue unconditionally subject to the sovereignty of the state, in conformity with National Socialist principles." On January 21 the Nazi Storm Troops were entrusted with the "defense education and training" of all German men over 17 years of age who were not receiving military training in the army, the Elite Guard or the Nazi Flying Corps. At the same time the aristocratic army oligarchy was dealt another blow through dissolution of the Reich League of German Officers. All reserve officers were required to join the Nazi-led Reich Veterans League. Thus Hitler carried into effect the military setup which Captain Roehm and other Nazi extremists demanded before they were executed at Hitler's orders in the Nazi purge of June, 1934.

The radical extremists within the Nazi ranks henceforth dominated the party councils, the outstanding exception being the relatively conservative Field Marshal Goering, who strengthened his hold as economic dictator. According to the British Ambassador to Berlin, the extremists actively prodded Hitler into war with Britain and France. He charged that whenever Hitler hesitated during the pre-war diplomatic crisis "the extremists . . . at once proceeded to fabricate situations calculated to drive Herr Hitler into courses which even he at times shrink from risking."

The Nazi-Soviet rapprochement was hailed by the Nazi radicals, while creating alarm and dismay among conservative elements within the party. It strengthened Hitler's hold upon lower-class groups, including many former Communists and radical Socialists, and was reflected in the growing hostility displayed toward the Christian churches, the aristocracy, capitalism, bourgeois customs and institutions, and even toward well-dressed individuals. Neutral diplomats and other observers leaving Germany toward the end of the year reported the development of a "Bolshevist spirit." The official war propaganda itself became increasingly anti-capitalist and proletarian in character. Fritz Thyssen, German steel master, and one of the chief financial backers of Hitler during his rise to power, fled to Switzerland in mid-November after his safety was threatened by his outspoken opposition to Hitler's pro-Soviet policy and the war.

In contrast with 1914, the German people entered the European War with little outward show of enthusiasm and with little evidence of resentment toward Britain and France. Some slight dis-

orders were reported in the Rhineland region early in September and the Gestapo (secret police) made numerous "protective" arrests of former Socialists and trade union chiefs. On September 16 and 17 several explosions attributed to anti-Nazis took place in Berlin. On the night of November 8 Chancellor Hitler narrowly escaped assassination when a bomb exploded in the historic Munich beer hall where veterans of the Nazi party had gathered for the anniversary celebration of Hitler's abortive *putsch* in 1923. The Chancellor, after delivering a scheduled speech, left the hall unexpectedly less than 15 minutes before the time bomb went off. It killed seven and injured 63 of those present. In a statement issued November 21 the German Government declared that a German named Georg Elser had confessed to the crime, that it was instigated and financed by the British Intelligence Service, and planned by Otto Strasser, a former associate of Hitler's who had broken with the Nazi party some years before and had since carried on underground warfare against it. Other quarters attributed the crime to former Nazis opposed to Hitler's Russian policy, or to friends or relatives of the victims of the Nazi "blood purge" of 1934.

Governmental Changes. On August 30, after war with Poland had been decided upon, Chancellor Hitler appointed a "Cabinet Council for the Defense of the Reich," headed by Field Marshal Goering and comprising Col. Gen. Wilhelm Keitel, chief of the army's supreme command; Cabinet Ministers Frick and Funk; Rudolf Hess, Deputy Leader of the Nazi party, and Dr. Hans-Heinrich Lammers, chief of the Reich Chancellery. The Council was authorized to issue decrees and ordinances without Hitler's signature in his absence. In his speech to the Reichstag on September 1, before leaving for the Polish front, Hitler said:

I have again put on that old uniform which was the most sacred and dear to me of all. I will not take it off until the victory is ours or—I shall not live to see the end. If anything should happen to me in this struggle, my first successor will be Party Member Goering. Should anything happen to Party Member Goering, his successor is to be Party Member Hess. It would then be your duty to follow these men as Fuehrer with the same blind loyalty and obedience as you follow me.

On September 5 Nazi district leaders in 15 of the 18 army districts were named Reich Defense Commissars to "assure unity of measures within the army district in all matters of civil Reich defense and guarantee close co-operation with the local army commander." Despite these well-laid plans for the organization and unitary prosecution of the war, there were indications during the last months of 1939 of differences regarding aims and strategy among Hitler's principal advisers and army chiefs.

See ARABIA, ARGENTINA, AUSTRALIA, AUSTRIA, BELGIUM, BOLIVIA, BRAZIL, BULGARIA, CANADA, CHILE, CHINA, COLOMBIA, CZECHO-SLOVAKIA, DANZIG, DENMARK, DOMINICAN REPUBLIC, ECUADOR, EGYPT, ESTONIA, FINLAND, FRANCE, GREAT BRITAIN, GUATEMALA, HUNGARY, IRAQ, ITALY, JAPAN, LATVIA, LITHUANIA, MEMEL, MEXICO, NETHERLANDS, NICARAGUA, NORWAY, POLAND, PORTUGAL, RUMANIA, SOUTH AFRICA, SPAIN, SWEDEN, SWITZERLAND, TURKEY, URUGUAY, and YUGOSLAVIA under *History*. Also ARMAMENTS, COST OF; EUROPEAN WAR; FASCISM; CHEMISTRY, INDUSTRIAL; INTERGOVERNMENTAL COMMITTEE; JEWS; MILITARY PROGRESS; NEUTRALITY; PAN AMERICANISM; REFUGEES; ROMAN CATHOLIC

CHURCH; UNITED STATES under *Foreign Relations*.

GHAZI I, gā'zē. King of Iraq, died in an automobile accident near Baghdad, Apr. 3, 1939. Born in 1912, he was educated at Harrow, England, and the Royal Iraqi Military College, and succeeded his father on Sept. 9, 1933. Shortly after he was married to his cousin, Princess Aliyah, daughter of former King Ali of the Hejaz. His son Feisal II, who succeeded him, was born May 2, 1935.

During his brief reign, Iraq was troubled by a series of tribal uprisings, the establishment of the dictatorship of General Sidqi during 1936-37, and a constant struggle for power by the contending factions in the country. However, on the credit side were the opening of a pipe line connecting the oil fields with the Mediterranean, the building of new roads and irrigation projects, and the signing of treaties with Iran, Turkey, Afghanistan, Saudi Arabia, and the United States.

GIBRALTAR. A British crown colony and fortified naval base near the western entrance to the Mediterranean. It is a narrow peninsula and includes a long mountain commonly called the "Rock" which has an extreme height of 1396 feet. Area, 17½ square miles; total civilian population (Jan. 1, 1939), 20,339 of whom 17,331 were fixed residents. Vital statistics (fixed population only): 354 births (20.48 per 1000), 252 deaths (14.54 per 1000). In 1938, there were 13 government-aided schools for primary education with a total of 2714 pupils on the registers, 4 secondary schools, and a few private schools.

Trade. The chief trade is the supply of coal, fuel oil, and provisions to shipping, and the transshipment of cargo to Morocco and Spain. No land is available in the colony for agricultural production. Fishing is carried on only for local consumption. Boat building, ship repairing, and the manufacture of tobacco, are minor industries. Statistics of imports and exports are not kept (except those that are recorded for revenue purposes). Gibraltar is practically a free port. There are about 14 miles of roads. During 1938 a total of 4752 ships aggregating 13,772,321 tons entered the port.

Government. For 1938, revenue totaled £207,628; expenditure, £199,725; public debt, nil. A governor assisted by an executive council of 7 members (4 official and 3 unofficial) administers the government. Legislative power is vested in the governor who, in addition, is the general officer commanding the garrison. Governor, Lt.-Gen. Sir Clive Liddell who assumed office during July, 1939, succeeding Gen. Sir Edmund Ironside.

History. During March, 1939, a landing field for aircraft was being constructed. The British Colonial Secretary approved the formation in Gibraltar of an anti-aircraft unit. Reports of Spanish troop movements near the frontier caused the authorities to have the road to the north barricaded and the frontier manned day and night. During the latter part of April a total of 53 warships (British, French, and German) were reported to be in the straits of Gibraltar and in nearby Moroccan and Spanish ports. A six-months' supply of food and ammunition was on hand, and, in order to insure an ample supply of fresh water, a tenth tank was constructed in the rock. Ten deep and spacious caverns were constructed as air-raid shelters for the population. On August 23, because of the threat of a general

war in Europe, boom defenses were placed in the harbor and all guns manned 24 hours a day. See SPAIN under *History*.

GIFTS. See **BENEFACCTIONS**.

GILBERT AND ELLICE ISLANDS. A British colony in the mid-Pacific, consisting of the Gilbert group (16 coral atolls), the Ellice group (9 coral atolls), the Phoenix group, and the distant Ocean, Fanning, Christmas, and Washington islands. Total area, 216 square miles; population (1938 estimate) 35,000. Phosphate production in 1938 (chiefly from Ocean Island) was 312,000 metric tons; output of copra (1937) aggregated 5109 metric tons. In 1937 imports were valued at £119,201; exports at £449,940. Budget estimates for 1938-39 anticipated revenue of £80,679 and expenditures of £84,612. The colony is administered by a resident commissioner (with headquarters on Ocean Island), under the British High Commissioner for the Western Pacific (with headquarters in Fiji).

History. The Phoenix Islands were included in the Gilbert and Ellice Islands colony by a British Order in Council of Mar. 18, 1937. According to the Anglo-American pact of Aug. 10, 1938, the islands of Enderbury and Canton (Mary) of the Phoenix group are for the common use of Great Britain and the United States for civil aviation and communications. See **CANTON ISLAND**; **ENDERBURY ISLAND**.

GILMAN, LAWRENCE. An American music critic, died in Franconia, N. H., Sept. 8, 1939. Born in Flushing, N. Y., July 5, 1878, he was educated in the public schools and at the Collins Street Classical School in Hartford, Conn., and subsequently studied at the Art Student's League. He was on the staff of the New York *Herald* during 1896-98.

Interested in music from his youth, he was self taught in musical theory, composition, orchestration, the piano, and the organ. In 1901 Mr. Gilman joined the staff of *Harper's Weekly* as music critic. His association with this magazine lasted until 1913, and included such positions as assistant editor (1903-11) and as managing editor (1911-13). He was transferred to the editorial staff of *Harper's Magazine* in 1913, but in 1915 he joined the *North American Review* as music, dramatic, and literary critic.

In 1923, after the death of Henry E. Krehbiel, he was invited to join the New York *Herald Tribune* as its music editor. Thereafter Mr. Gilman contributed a daily and a Sunday column to that newspaper. His style, enthusiasms, and dislikes all combined to attract readers to his musical comment. Chief among his enthusiasms were the conducting of Arturo Toscanini and the works of Richard Wagner. He considered the latter, on whom he was the leading American authority, the greatest of composers.

From 1921, Mr. Gilman was the program annotator for the New York Philharmonic Society and the Philadelphia Orchestra, and during 1933-36 he was radio commentator for the Sunday broadcasts of the New York Philharmonic-Symphony, Toscanini conducting. Mr. Gilman set to music, for voice and piano, three poems of W. B. Yeats (q.v.), *A Dream of Death* (1903), *The Heart of the Woman* (1903), and *The Curlew* (1904).

Besides *A Guide to Strauss' "Salome"* (1907) and *A Guide to Debussy's "Pelléas et Mélisande"* (1907), he wrote *Phases of Modern Music* (1904), "Edward McDowell" in the *Living Masters of Music* series (1905; rev. and enl., 1909), *The*

Music of Tomorrow (1906), *Stories of Symphonic Music* (1907), *Nature in Music* (1914), *A Christmas Meditation* (1916), *Music and the Cultivated Man* (1929), *Aspects of Wagner's Operas* (1937), and *Toscanini and Great Music* (1938).

GIRL SCOUTS. A movement for girls from 7 to 18, started in Savannah, Ga., Mar. 12, 1912, by Mrs. Juliette Low, and adapted from the Girl Guide program begun in England by Lord Baden-Powell in 1909. Girl Scouting is a voluntary, non-sectarian, non-political leisure time program which supplements the home, the school, and the church. It helps girls to develop as individuals and as members of society through activities in ten fields of interest: homemaking, the out-of-doors, arts and crafts, community life, sports and games, nature, health and safety, literature and dramatics, music and dancing, community life, and international friendship. For Senior Girl Scouts, who are from 14 to 18 years old, there is an additional field, vocational exploration.

In 1939, Girl Scouts, Inc. adopted a new constitution reaffirming the dominant position of local groups in the national organization and making some structural changes including a plan for biennial conventions and election of officers for two years. A work plan for the adults of the organization was adopted covering the years 1939-41. Among the national objectives set forth in the plan are the following: 1. To develop and provide materials which will help Girl Scouts plan and carry out all their activities in a democratic way. 2. To develop and provide materials which will help the girl to be a constructive member of her family. 3. To provide ways for the girl to become better acquainted with her community and to participate in local affairs appropriate to her age and ability.

In August, five American Girl Scouts and their leader attended the annual gathering of Girl Scouts and Girl Guides at "Our Chalet," international Girl Scout meeting place near Adelboden, Switzerland. Nine other nations were represented. These meetings are made possible by the Juliette Low Memorial Fund, maintained by the Girl Scouts of the United States.

The official organ for girls is *The American Girl* magazine, and for leaders, the *Girl Scout Leader*, each a monthly publication. The national officers in 1939 were: Honorary president, Mrs. Franklin D. Roosevelt; president, Mrs. Frederick H. Brooke; acting chairman of the board of directors, Mrs. F. Louis Slade; national commissioner, Mrs. Frederick Edey; secretary, Mrs. Ralph G. Wright; treasurer, Miss Eleanor Frances Edson. At the national convention held in October, 1939, Mrs. Harvey S. Mudd of Beverly Hills, Calif., was elected president and chairman of the board, and Mrs. Ralph G. Wright, chairman of the executive committee. Mrs. Paul Rittenhouse is national director. Headquarters are at 14 West 49th Street, New York City.

GLASS. Glass has been known to exist for more than five thousand years, yet greater advances have been made both in methods of manufacture and in the character of the material, during the past decade, than in all the other years taken together. Some of the developments of 1939 are not only remarkable in themselves, but are suggestive of even more revolutionary developments that lie just ahead.

Reconstructed Glass. The process by which this type of glass is made was developed by the Corning Glass Works incidental to another line

of research it was pursuing. Certain types of borosilicate glasses are leached in an acid bath. This leaching leaves a residual porous structure, which is then condensed by firing at a vitrifying temperature. During the heat treatment, a linear shrinkage of 13 per cent or a volumetric shrinkage of 36 per cent occurs. The final product is a clear, solid glass, very high in silica and for practical purpose equal to fused quartz.

The commercial importance of this glass is its high resistance to thermal shock, the coefficient of linear expansion being 7.8 to 10^{-7} . A dish made of "reconstructed" glass can be placed upon a cake of ice and molten metal poured into it without cracking the glass. It is understood that a new top-of-the-stove ware will be placed upon the market, probably in late 1940 or in 1941.

"Invisible Glass." The observation upon which this discovery was made dates back to 1892, when Dennis Taylor observed that tarnished lenses were effectively faster than new lenses. The 1939 interpretation of this observation is that a film placed artificially upon a glass surface will reduce reflection of light, and hence increase its transmission. For such a film to be effective, two conditions must be fulfilled: the index of refraction of this film material should be just intermediate between that of air and the glass; also, that the optical thickness of the film should be one-quarter of the wave length of the light. Both conditions were fulfilled simultaneously by two investigators working independently and without knowledge of the other. Dr. Katharine B. Blodgett (General Electric Co.) applied soap film to the glass in successive monomolecular layers, and Dr. C. Hawley Cartwright (Massachusetts Institute of Technology) evaporated films of metallic fluorides. The first important application of the latter method has been in new projector lenses. During January of 1940, the Bausch and Lomb Optical Co. equipped each of 25 Loew's theaters with an advanced type of projector lens for the premier showing of *Gone with the Wind*, and as this film was in color, the improvement in focal sharpness and in image contrast was pronounced. See PHOTOGRAPHY.

The Sealed Beam Headlight. Representing three years of co-operative effort on the part of the glass, lighting, automotive industries, in which many state motor vehicle administrations assisted, the sealed beam headlight became a reality in 1939. The story behind this development is fantastic and it may prove to be one of industry's great losses that the tale may never be written. The new headlight is expected to revolutionize night driving. (See also AUTOMOBILES.)

The sealed beam headlight incorporates into one single unit both the (glass) reflector and the light source, with the lens sealed permanently into the unit so that this also becomes an integral part of it. The inside of the lens and reflector surface are thus protected from dust, dirt, moisture, and corrosion, enabling the headlight to retain almost its full initial efficiency throughout its life. This headlight carries no light bulb, the housing itself functioning in that capacity. Many 1940 cars already carry this equipment, but full servicing of automobile output has been hindered by inadequate production capacity.

The Fluorescent Lamp has been developed, offering a new type of lighting that generates less heat, is more efficient, and cheaper to operate. This lamp is a sealed glass tube incorporating a controlled composition of fluorescent coating on

the inside of the tube. Light is produced through the agency of invisible radiation acting on the coating. These fluorescent powders are highly effective converters of invisible energy into visible light with little radiant heat. Colors available are green, blue, pink, gold, and daylight.

The **Germicidal Lamp** is another new lamp that generates a short-ultra violet wave extremely effective in destroying microorganisms. It has found great usefulness when installed in air ducts, and is used widely by meat packers, butchers, bakers, and canners. Some refrigerators have been equipped with these lamps.

Safety Glass. Great improvements in the manufacture of safety glass have been recorded during 1939. Safety glass consists of two sheets of ordinary flat glass with a layer interposed of sheet plastic. By the use of polyvinyl acetal (sheets as thin as .015"), the plastic will elongate under impact more readily than with the plastic formerly used—cellulose acetate and cellulose nitrate. At 70° F., the Hi-Test laminations are at least twice as resistant as the cellulose plastics when subjected to the same impact, thus increasing the safety factor.

Building Materials. Glass building blocks have passed permanently from the development stage into quality production and their use in structures of all kinds has become almost commonplace. A new type of block was introduced in the fall of 1939 in which an interior screen of glass fibers has been made use of to reduce the transmission of solar energy. **Thermopane** was also introduced during the year. This is a double glazing with a layer of dehydrated air between, the whole having the appearance of a single glass. This glass is said to effect a reduction in heat transmission of from 53 to 56 per cent. Another addition to the construction field is the so-called **architectural glass**. For the first time a continuous method of producing molded panels has been evolved. These panels are cast in any form of relief called for in the architect's specifications. They are translucent and have important decorative values.

Fiber Glass. The insulating efficiency of glass has given its use in fiber form a tremendous impetus commercially. Whereas at the beginning of 1939, fiber glass had only two industrial uses, by November the number had increased to 425. Among the most notable uses of fiber glass are its application to the field of thermal insulation, electrical insulation, air filtration, acoustical insulation, fireproof decorative fabrics, and chemical filtration. Electric motors, for example, can be reduced approximately $\frac{1}{2}$ of normal size and weight by replacing the insulating material with glass; lead covered cable can be reduced substantially in diameter by insulating the individual wires with glass, thereby effecting important saving in the amount of lead used and in the weight of the cable itself.

High Index Glasses. By the use of certain rare oxides of high molecular weight, glasses have been obtained of high index up to 2.0 and of comparatively low dispersion. In lens design, the value of a glass depends upon the relation between refractive index and dispersion. The last great advance was the discovery by Schott of the dense barium crown glasses which had a much smaller dispersion than the glasses of the conventional crown flint series of the same refractive index. These new glasses of high refractive index show an even greater difference from the

conventional crown flint series, which should make possible the construction of lenses of high aperture and great freedom from residual aberrations. Lenses of this type are said to be an actual production.

Glass Containers. Improvements in the machinery used to form or shape bottles have resulted in forward progress, the speed of manufacture being increased and the quality of the ware improved. Most important of all, this improvement has made possible the new lightweight containers. Originating with the beer bottle which has been reduced some 40 per cent in weight, the lighter bottle is being extended into other fields, notably food packaging.

Glass Industry. Production of glassware for the year 1939 is estimated at approximately \$320,000,000 according to indices compiled and published by *The Glass Industry*. This makes the year the second largest in history, the high mark for all time being reached in 1937, when the total was \$354,038,944 according to U.S. Census figures.

Glass containers, the largest division of the industry, reached a total production of 51,224,555 gross, which lacked only 2.7 per cent of the peak reached in 1937. The year's output exceeded 1938 by 19 per cent. Shipments for the year totaled 49,167,000 gross, and this 2,000,000 shortage under production resulted in an accumulated inventory of 9,237,000 for the entire industry on December 31. While large, the stocks on hand are not unwieldy.

Plate glass production totaled 141,740,835 square feet for the year, a gain of 65 per cent over 1938, but well short of a record. 1939 was the fifth largest year, maximum activity having been reached in 1936 (198,068,838 sq. ft.), and the other three years being 1937, 1935, 1929, in the order named. Window glass during 1939 totaled 10,776,000 boxes.

All other glassware reached an aggregate of some \$100,000,000, a figure that exceeds 1938 by some 25 per cent. Tableware and illuminating ware are the most important items volumewise of the miscellaneous group, and the former had a particularly successful year.

Employment and Payrolls. According to *The Glass Industry*, there was an average of 70,000 persons employed during 1939 in the various divisions of the glass industry, a net gain of 6000 over 1938, which compares with 79,000 in 1937 and 68,000 in 1929. Payrolls totaled over \$91,000,000 for the industry, the largest sum of money paid to workers in any year except 1937 which was \$102,000,000. In 1929, payrolls totaled \$88,000,000.

Exports. Preliminary figures place the value of glassware exported at almost \$10,500,000, an increase of 25 per cent over 1938 and the highest total in a decade. Percentage gains were largest

Imports. Imports fell to \$5,158,000, a decrease of 21 per cent from 1938.

JOHN T. OGDEN.

GLANDS AND HORMONES. See BIOLOGICAL CHEMISTRY.

GOA. See PORTUGUESE INDIA.

GOLD. Throughout 1939 the United States Treasury continued to pay \$35 per ounce for gold, thus establishing the United States as the only free market for the world's production, and accepting all that was offered. One result was that the trend of increased world production in recent years was continued in 1939, in spite of rising costs for labor, taxation, and supplies. The increase for 1939 over 1938 was about 7 per cent, as shown in the accompanying Table I

TABLE I—WORLD GOLD PRODUCTION

[In thousands of fine ounces]

	1939	1938
Principal gold producing countries		
North America	11,961	10,738
United States (including Philippines)	5,592	5,090
Canada	5,324	4,725
Mexico	1,045	923
South America	888	815
Colombia	558	521
Chile	520	294
U S S R. (Russia)	5,250	5,255
Africa	14,464	14,154
South Africa	12,361	12,161
Rhodesia	772	815
West Africa	837	705
Belgian Congo	494	473
Asia and Oceania	2,077	2,013
Australia	1,771	1,692
British India	306	321
Total, principal countries	34,640	32,975
Other countries	5,140	4,237
World total	39,780	37,212

‡ Preliminary.

World production for 1939 is estimated by *Engineering & Mining Journal* at 39,780,000 fine oz., compared with 37,212,000 oz. in 1938. Principal producing countries ranked in the following order: South Africa, 12,361,000 oz.; United States, including the Philippines, 5,592,000 oz.; Canada, 5,324,000 oz.; the U.S.S.R., for which accurate figures are always lacking, 5,250,000 oz.

In the United States California retained its leadership in gold production, and Homestake Mining Co., South Dakota, held its premier position among individual producers.

U.S. Treasury continued to accumulate gold in 1939 increasing its reserve from about \$14,500,000,000 at the close of 1938 to more than \$17,600,000,000 at the close of 1939. Table II, according to *Engineering & Mining Journal's* review, gives the sources of monetary gold acquired by the United States for the period January 1934 to August 1939.

Maldistribution of gold among the nations of the world is a source of continued speculation on the uncertain future of gold as a monetary metal. In 1913 the United States held one-fifth to one-quarter of the world's monetary gold. By 1918 the proportion had risen to two-fifths, and by 1939 to two-thirds. Gold is still money in the United States, but not in the United Kingdom; and other countries are liquidating their gold reserves and adopting new devices for international settlements. Thus the future of gold as a monetary metal is an uncertain quantity, which must ultimately have a profound effect on the future of the gold industry.

1939 UNITED STATES FOREIGN TRADE IN GLASS

Kind of glass	Exports	Imports
Plate	\$ 1,106,000	\$ 75,000
Window	70,000	793,000
Containers	3,454,000	324,000
Tableware	1,936,000	873,000
Illuminating Ware	473,000	375,000
All Other	3,395,000	2,718,000
Total	\$10,461,000	\$5,158,000

with flat glass products, while actual volume increases were greatest in containers, tableware, and miscellaneous pressed and blown items.

War conditions led the United Kingdom early in September 1939 to fix the price of gold at 168 s. per ounce. South African producers, however, received only 150 s., the remainder being re-

TABLE II—SOURCES OF MONETARY GOLD ACQUIRED BY THE UNITED STATES

January 1934–August 1939

(Approximate figures in millions of dollars)

Mine output	
United States	700
Foreign (including U.S.S.R.)	5,800
Sales from private holdings in Orient	
India	650
Other countries	125
Return of scrap and coin (net)	
United States	100
Foreign	125
Total new supplies	7,500
Deduct estimated increase in private hoards in Western countries	500
Net total addition to world's monetary gold stock	7,000
Changes in central reserves in foreign countries (including estimated unreported holdings)	
Decreases	3,700
Increases	1,000
Net decrease	2,700
Increase in United States monetary gold stock	9,700

tained by the Government. Australian producers received 156 s., and Canada was allowed the full benefit of the 10 per cent increase in the Canadian gold price, about \$38.50 (Canadian) per ounce.

H. C. PARMELEE.

GOLD COAST. A British colony in West Africa, comprising the Gold Coast colony (23,937 sq. mi.), Ashanti (24,379 sq. mi.), Northern Territories (30,486 sq. mi.), and the area of Togoland mandated to Great Britain (13,041 sq. mi.). Total area, 91,843 square miles; total population (July, 1937, estimate), including British Togoland, 3,700,267, of which 4463 were non-Africans. The principal towns are Accra (72,977 inhabitants), Sekondi (21,614), Cape Coast (19,412), Kumasi (43,413); Tamale (18,591), Koforidua (13,957), and Ho (3549).

Production and Trade. The main products are cacao, kola nuts, palm kernels, copra, rubber, maize, yams, timber, gold, manganese ore, and diamonds. The 1938–39 cacao crop was estimated at 292,600 metric tons. Gold production in 1938 totaled 674,927 fine ounces, the highest in the history of the Gold Coast. The Gold Coast is the second largest producer of diamonds and the third largest producer of manganese ore in the world. In 1938, total imports (including specie and currency of £2,722,589) were valued at £10,380,323; exports (including re-exports of £4,345,626) totaled £15,425,496, of which cocoa (263,229 tons) accounted for £4,540,899; gold (677,480 fine oz.), £4,841,633; manganese (324,207 tons) £907,972; diamonds (1,296,763 carats) £548,027. The colony is the chief producer of the world's cocoa.

Communications. In 1938 the length of railway line open to traffic totaled 500 miles; 3,436,478 passengers and 1,004,876 tons of freight were carried. Accra is the exchange center for air mails received and dispatched by Imperial Airways and the French Aeromaritime services. Takoradi, the chief harbor, is the only port accommodating ships of over 30 ft. draught between Sierra Leone and Nigeria.

Government. In the year ended Mar. 31, 1938,

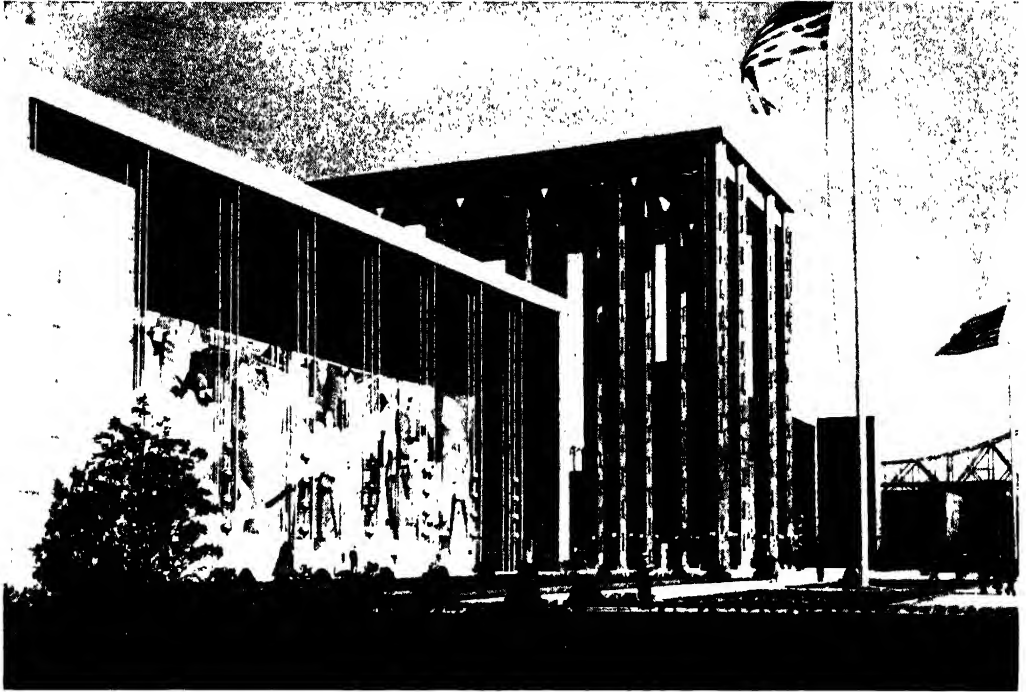
net revenue totaled £3,791,673; net expenditures, £3,636,569. The government of the colony is administered by a governor assisted by an executive council, and a legislative council of 15 official and 14 unofficial members. Ashanti, the Northern Territories, and Togoland (British) are administered by the governor of the Gold Coast, and their statistics for trade, etc., are included in the general total for the Gold Coast. Governor and Commander-in-Chief, Sir Arnold W. Hodson (appointed Oct. 20, 1934).

GOLDEN GATE INTERNATIONAL EXPOSITION, 1939. The Golden Gate International Exposition, on 400-acre Treasure Island in San Francisco Bay, was a "Pageant of the Pacific" celebrating the great strides made by Western America and the Pacific Basin, both industrially and as a vacationland playground. Its site was reclaimed from the harbor bottom by U.S. Army Engineers at a cost of \$3,800,000 in PWA funds, sponsored by the Exposition. Additional WPA and PWA funds were applied to construction of permanent buildings and public services such as drainage, sewerage, and water supply. At the close of the Fair, which operated from February 18 to October 29, 1939, Treasure Island will become a municipal airport valued at \$10,000,000 and operated by the city of San Francisco for the benefit of the Bay Area. It is 5520 feet long and 3400 feet wide and stands 13 feet above sea level. It is located just north of Yerba Buena Island, and access to the Island is by the San Francisco–Oakland Bay Bridge and ferry.

Sponsors of the West's World's Fair were the eleven Western States of America, supported by some 30 foreign nations and outlying territories, including Japan, Guatemala, Nicaragua, Costa Rica, Mexico, the Netherlands East Indies, Ecuador, Brazil, Peru, French Indo-China, Argentina, El Salvador, New Zealand, Australia, British Columbia, Johore, Venezuela, Uruguay, Paraguay, Chile, Bolivia, France, Czechoslovakia, The Netherlands, Germany, Norway, Italy, and Hawaii. Many of these nations erected their own buildings, of colorful native architecture, in the Pacific Basin area—a chain of lagoons eastward of the main palace group on Treasure Island—and others were found in the hall devoted to international exhibits.

The Exposition expended \$6,512,330.24 in operating and maintaining the Fair for the 254 days of its duration. More than \$15,800,000 was spent by visitors for gate admissions and concessions. Of this, \$11,700,000 represented concessions and \$4,100,000 admissions. The Exposition sold 12,300,000 admissions, of which 1,800,000 tickets were unredeemed. Approximately 10,000 were employed on the grounds of Treasure Island during the peak of the operating period. Of these, 2500 were employed by the Exposition and 7500 by exhibitors and concessionaires and other participants.

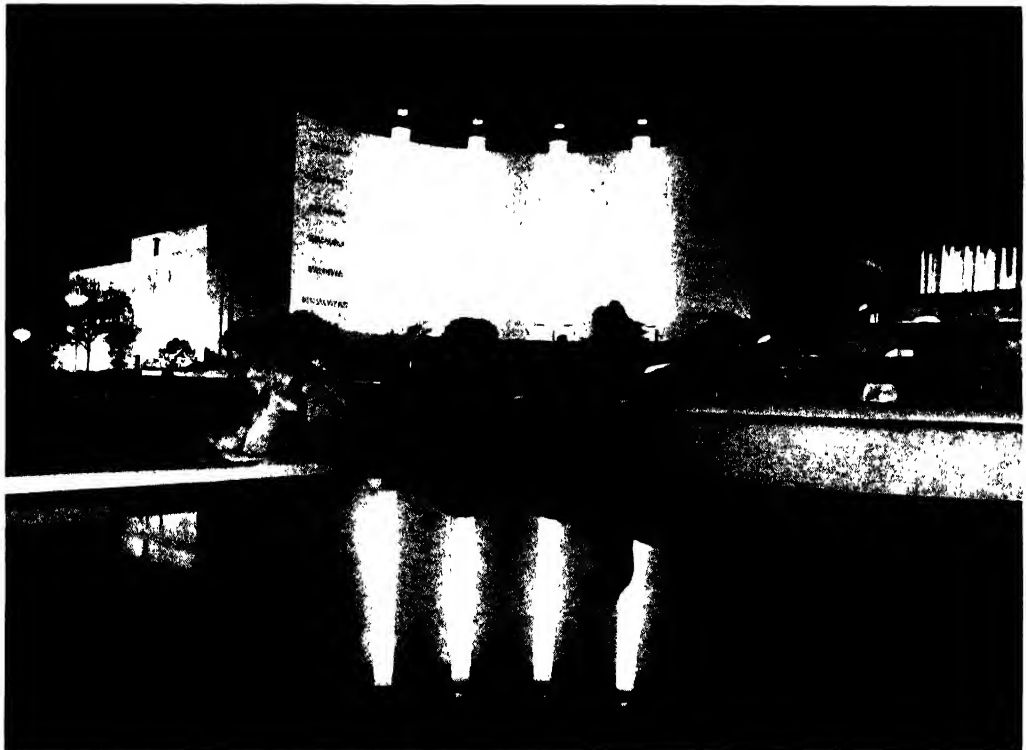
The Exposition was built, at the cost of \$17,500,000, in the form of a walled city, with a new "Pacific" type of architecture that blends old Mayan, Incan, Malayan, and Cambodian forms. Buildings were finished with iridescent stucco that reflected sunlight or floorlights, and landscaping cost \$15,000,000, turning the sandy island into a luxuriant subtropical garden of exotics and tall trees. The illumination program, at a cost of \$1,000,000 made a permanent contribution to the science of color in floodlighting



Courtesy Golden Gate International Exposition

FEDERAL BUILDING ON TREASURE ISLAND

Within the Federal Building at the Golden Gate International Exposition was one of the most magnificent exhibits at the West's World Fair. Two mammoth murals flank the great colonnade of States piercing the center of the structure which faced the Court of the Nation on the West.

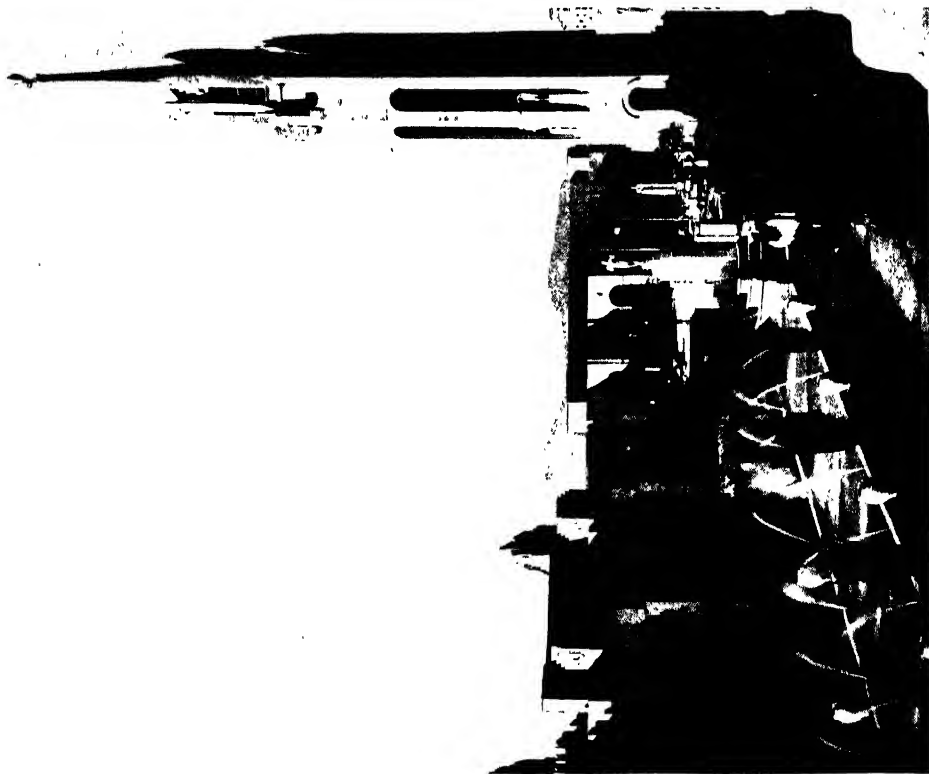


Courtesy Golden Gate International Exposition

NIGHT SCENE ON TREASURE ISLAND

In the foreground is the Fountain of Western Waters in the Court of Pacifica.

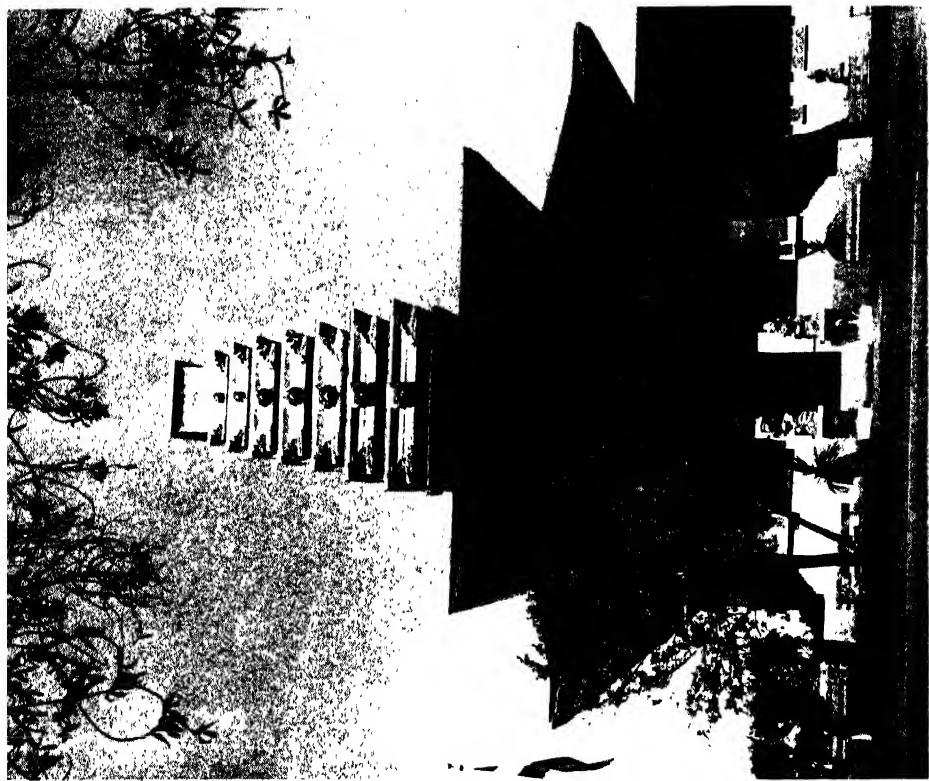
GOLDEN GATE INTERNATIONAL EXPOSITION



Courtesy Golden Gate International Exposition

FOUNTAIN OF EVENING STAR

When in action the Fountain of the Evening Star on Treasure Island, San Francisco Bay site of the 1939 Golden Gate International Exposition, cascades arches of water over this pool. At the right is the majestic Tower of the Sun



Courtesy Golden Gate International Exposition

NETHERLANDS EAST INDIES PAVILION

Surrounded by grotesque statues, the Netherlands East Indies Pavilion on Treasure Island is perhaps the most picturesque foreign building at the Golden Gate International Exposition

and was completely indirect, not a single light-source being visible to the eye.

Dominating the "magic city" in the central Court of Honor was the Tower of the Sun, 400 feet high and crowned by a golden Phoenix, symbolic of San Francisco's rise from its ashes after the fire of 1906. This tower, splendidly lighted at night, mounted a carillon of 44 bells. From it radiated the main axes of the Exposition—the Court of the Seven Seas and Court of Pacifica toward the north; the Courts of Flowers and of Reflections eastward, and the Court of the Moon and Enchanted Gardens toward the south. These courts were framed by the massive exhibit halls, with subordinate towers at their outer terminals, and great murals and sculptures everywhere.

Separate courts had their separate color schemes, carried out in flowering trees and seasonal blooms as well as in architectural features, but unity is maintained by flowing color-changes without sharp contrasts.

Some of the outstanding buildings, exhibits, and unique features of the Western World's Fair included:

China Clipper Base. On Treasure Island, every operation of Pan American Airways in its Transpacific division was "under glass" for millions of visitors. Arrivals and departures of the China Clippers, largest flying boats in the world, took place in the Port of the Trade Winds; complete terminal overhaul was made in the Hall of Air Transportation, behind glass walls.

Indian Presentation. The six distinct civilizations of the American Indian, with artisans producing fine hand-made articles that rank with the best importations, were dramatically presented as part of the Federal exhibit.

Cavalcade of the Golden West. Super-pagant that dramatized the colorful history of the Western Empire from first explorations to modern times.

The Gayway. "Forty Acres of Fun" with an exotic international flavor, from Javanese dancing girls to the dizziest mechanical "rides" and games of skill.

Fine Arts. A history-making collection of Old Masters from Europe, prehistoric and modern arts of the Pacific Basin, decorative arts, the Japanese National Treasure, and other items.

Fiesta in the West. The Golden Gate International Exposition was the climax of a west-wide celebration in 1939. Every State and community enlarged the regional pageants—rodeos, harvest and flower festivals, "jumping frog" contests, fishing derbies, snow carnivals, etc.

Administration Building. A million-dollar, three-story semicircular structure of concrete and steel near the causeway to the Bay Bridge. During the Fair it housed Exposition business offices; after 1939 it will be the Airport Terminal.

Federal Building. A seven-acre structure housing the \$1,500,000 United States Government exhibit, on the eastern frontage of Treasure Island. A hollow rectangle pierced by a great Colonnade of States, it contained a lavish Indian presentation and exhibits dramatizing many of the activities of the Federal Government.

Hall of Western States. Built around a huge relief map of the West, this imposing structure presented the economic story of the commonwealths sponsoring the Fair. British Columbia was included with California, Oregon, Washington, Wyoming, Montana, Idaho, Nevada, Utah, Colorado, Arizona, and New Mexico.

Pacific House. An imposing cruciform structure on an island surrounded by the Pacific Basin lagoons. It housed exhibits dealing with problems of health, geography, and industrial evolution in the Pacific, as well as a Hall of Pacific Relations in which international commissions discussed the issues of the hour.

International Hall. A section of the main exhibit palace group, devoted to foreign nations which did not erect their own buildings. Their exhibits stressed their progress in cultural and economic fields.

California State Group. This \$5,000,000 "Golden State" exhibit included a total of 11 buildings—the California Hospitality Building, nine others dedicated to groups of California's 58 counties, and a huge Livestock Coliseum. The county buildings included Redwood Empire, Mission Trails, Shasta-Cascade, Alameda-Contra Costa, San Francisco, Sacramento Valley, and Mountain, San Joaquin, Southern California, and Alta California.

Japan. An elaborated feudal castle and detached Samurai house, fabricated in Japan and shipped in sections to Treasure Island. The \$500,000 display was set in typical Japanese gardens on the bank of a lagoon, and stressed transportation and communications, silk, arts and crafts, and pearl culture.

Netherlands East Indies. A Javanese pavilion fabricated in Batavia of native woods, intricately carved. Authentic Balinese dances were a feature of the display, which also touched upon arts, crafts, and agriculture of the glamorous Spice Islands.

Hall of Air Transportation. One of the two huge permanent hangars, containing the Transpacific base of the China Clippers, "under glass" for the full view of visitors. One-fourth of the building contained commercial aviation exhibits featuring domestic air transport.

Palace of Fine Arts. The second fireproof hangar contained an art show running the range of Old Masters loaned by European galleries; an amazing collection of Pacific Basin arts, both prehistoric and modern; a substantial share of the Japanese National Treasure, and many other features.

At the end of the year it was announced that the Fair would reopen on May 25, 1940. See ARCHITECTURE; ART EXHIBITIONS; PEACE, SCULPTURE, TELEPHONY.

GOLD IMPORTS. See BANKS AND BANKING; FINANCIAL REVIEW.

GOLF. See SPORTS.

GOODNOW, FRANK JOHNSON. An American educator and legal scholar, died in Baltimore, Md., Nov. 15, 1939. Born in Brooklyn, N. Y., Jan. 18, 1859, he was educated at Amherst College (A.B., 1879; A.M., 1887), Columbia University (LL.B., 1882), and at the École Libre des Sciences Politiques, Paris, and the University of Berlin. Upon his return he joined the faculty of Columbia University and was successively instructor in history and lecturer in administrative law of the United States (1883-87), adjunct professor (1887-91), professor of administrative law (1891-1903), and Eaton professor of administrative law and municipal science thereafter. During 1906-07 he was acting dean of political science.

In 1913, Dr. Goodnow resigned to act as legal adviser to the first government of the Republic of China; many of his recommendations were incorporated into the Chinese Constitution. In

the following year he was elected president of Johns Hopkins University. Under his guidance, the University expanded along conservative lines; though it grew in size and in numbers, there was no sacrifice of scholastic standing. An authority on international affairs himself, it was largely through his efforts that the Walter Hines Page School of International Relations was established. Also, he instituted the Institute of Legal Research, but the project was later abandoned through lack of funds to carry it on. One of his last acts at the University was a reorganization in which greater stress was laid on graduate work and specialization than on the general undergraduate studies. In 1929 Dr. Goodnow was retired with the title of president emeritus.

One of the country's foremost experts on municipal, state, and national government administration, Dr. Goodnow served on the New York Charter Revision Committee (1900), also on the Public Ownership Commission of the National Civic Federation, which investigated municipal ownership undertakings in Europe (1906); as a representative of the United States at the convention on administrative science at Brussels (1910), and as a member of President Taft's economy and efficiency committee (1911-12).

Dr. Goodnow was a prolific writer in his chosen field of administrative law; his works include: *Comparative Administrative Law* (1893), *Municipal Home Rule* (1895), *Municipal Problems* (1897), *Politics and Administration* (1900), *City Government in the United States* (1904), *Principles of the Administrative Law of the United States* (1905), *Municipal Government* (1910), *Social Reform and the Constitution* (1911), and *Principles of Constitutional Government* (1916). He edited *Principles of Constitutional Government* (1916) and *China, An Analysis* (1926). He received honorary degrees from Amherst, Columbia, Harvard, Brown, Princeton, Johns Hopkins, and the University of Louvain, and was a fellow of the American Academy of Arts and Sciences and the first president of the American Political Science Association.

GOOD-WILL FLIGHTS. See AERONAUTICS.

GOODYEAR CENTENARY. See RUBBER.
GORNO-BADAKHASHAN AUTONOMOUS REGION. See TAJIK SOVIET SOCIALIST REPUBLIC.

GOUCHER COLLEGE. A nonsectarian college for women in Baltimore, Md., founded in 1885. The enrollment for the first term of the year 1939-40 was 608. The faculty had 77 members. The endowment funds of the college amounted to \$2,456,141, and the income for 1938-39 was \$539,619. The library contained 71,836 volumes. President, David Allan Robertson.

GOUGH ISLAND. See ST. HELENA.

GOVERNMENT REPORTS, OFFICE OF. The Office of Government Reports was created to perform certain functions transferred to the Executive Office of the President pursuant to the President's Reorganization Plan No. II, effective July 1, 1939. The functions assumed were those of the National Emergency Council with the exception of the Radio and Film Divisions of the Council, which were transferred to the Office of Education, Federal Security Agency. The National Emergency Council, an independent establishment, was abolished in accordance with provisions incorporated in the Reorganization Plan.

The purposes of the Office of Government Re-

ports, as defined in Executive Order No. 8248 of Sept. 8, 1939, are:

1. To provide a central clearing house through which individual citizens, organizations of citizens, State or local governmental bodies, and, where appropriate, agencies of the Federal Government may transmit inquiries and complaints and receive advice and information.

2. To assist the President in dealing with special problems requiring the clearance of information between the Federal Government and State and local governments and private institutions.

3. To collect and distribute information concerning the purposes and activities of executive departments and agencies for the use of the Congress, administrative officials, and the public.

4. To keep the President currently informed of the opinions, desires, and complaints of citizens and groups of citizens and of State and local governments with respect to the work of Federal agencies.

5. To report to the President, on the basis of the information it has obtained, possible ways and means for reducing the cost of the operation of the Government.

The principal divisions of the Office of Government Reports are as follows: Administrative Division; Division of Field Operations; Division of Press Intelligence; United States Information Service.

As directed by the President the Office of Government Reports, through its Division of Field Operations, prepares reports concerning the programs of Government departments and agencies, studies progress in the accomplishment of the objectives of these programs, and recommends desirable steps to be taken to overcome obstacles. When requested by other Government agencies, the Office obtains from its field representatives surveys of current conditions relating to specific problems of such agencies.

The Division of Press Intelligence performs a comprehensive press clipping service for Government officials and Members of Congress. It compiles daily newspaper clippings, of which it furnishes duplicates and lends file copies; provides special research upon request; publishes a daily bulletin summarizing news items and editorials on the work of every Federal department and agency; and issues a weekly report comprising abstracts of magazine articles and editorials on public affairs.

The U.S. Information Service functions as a central clearing house for information on all phases of Government activity. It serves both the Government and the general public by furnishing, upon request, factual information on the structure and operations of the Federal departments and agencies and by directing inquiries into proper channels. A branch office is located in New York City. The Service publishes the *United States Government Manual*, an authenticated reference book covering the creation and organization, functions and activities of all branches of the Government.

LOWELL MELLETT.

GRAF SPEE. See EUROPEAN WAR; PAN AMERICANISM; ARGENTINA and URUGUAY under *History*.

GRAHAM LAND. See FALKLAND ISLANDS.

GRAND COULEE DAM. See DAMS.

GRAPEFRUIT. See HORTICULTURE.

GRAPHIC ARTS. See PRINTS.

GRASSHOPPERS. See ENTOMOLOGY, ECONOMIC.

GRAY, CARL RAYMOND. An American railroad executive, died in Washington, May 9, 1939. Born in Princeton, Ark., Sept. 28, 1867, he was educated in the preparatory department of the University of Arkansas, and in 1883 joined the St.

Louis and San Francisco R.R. Co. as telegraph operator and station agent. Through a number of lesser advancements with this railroad, he became division superintendent (1897), superintendent of transportation (1900), vice president and general manager (1904), 2d vice president in charge of operation (1906), and senior vice president (1909).

On May 1, 1911 he assumed the presidency of the Spokane, Portland & Seattle and the Oregon Electric Railways and a year later of the Great Northern Railway. From 1914 to 1918 he was president of the Western Maryland Railway and during 1917-18 was chairman of the Wheeling and Lake Erie Railway. During the wartime period (Jan. 5, 1918-Jan. 15, 1919) he served as director of the division of operation of the U.S. Railroad Administration, and on the latter date resumed the presidency of the Western Maryland and the chairmanship of the Wheeling. In 1920 he was elected president of the Union Pacific System, serving as such until 1937 when he retired on reaching the age limit of 70. He was then elected vice chairman of the board of directors. Under his leadership, the road became one of the most profitable in the country, being one of the few railroads to pay dividends on common stock during the depression.

During 1938-39, Mr. Gray served on President Roosevelt's special committee of railroad management and labor executives.

GREAT BRITAIN. Official designation for the political union embracing England, Scotland, and Wales. Capital, London. Sovereign in 1939, George VI, who succeeded to the throne upon the abdication of Edward VIII on Dec. 10, 1936, and was proclaimed King on Dec. 12, 1936. Great Britain, together with Northern Ireland, the Isle of Man, and the Channel Islands, forms the United Kingdom of Great Britain and Northern Ireland. For statistical purposes, the Isle of Man, the Channel Islands, and in some cases Northern Ireland, are included under Great Britain. See BRITISH EMPIRE; IRELAND, NORTHERN.

Area and Population. The area of Great Britain, the census population of Apr. 27, 1931, and the estimated population on June 30, 1938, are shown by political divisions in the accompanying table.

GREAT BRITAIN · AREA AND POPULATION

Divisions	Area in sq. miles	Population	
		1931	1938
England (including Monmouthshire)	50,874	37,794,003	41,215,000
Wales	7,466	2,158,174	
Scotland	30,405	4,842,980	
Isle of Man	221	49,308	
Channel Islands	75	93,205	145,000*
Total	89,041	44,937,444	47,485,000

* Jan. 1, 1938.

Live births in England and Wales in 1938 numbered 621,627 (15.1 per 1000); deaths, 478,927 (11.6 per 1000); marriages, 360,339 (8.7 per 1000). Live births in Scotland in the same year totaled 88,604 (17.8 per 1000); deaths, 62,953 (12.6 per 1000); marriages, 38,747 (7.8 per 1000). Permanent British emigrants to places outside of Europe numbered 31,144 in 1938 and immigrants of British nationality into Great Britain numbered 40,611. Of the emigrants, 1992 went to the United States, 3367 to British North America, 5427 to Australia, 2425 to New Zealand, 6003 to British South Africa, 5540 to India and Ceylon. The pop-

ulation of England and Wales is 80 per cent urban and 20 per cent rural.

Estimated populations of the chief cities in 1937 (except when otherwise indicated) were: Greater London, 8,655,000; County of London, 4,141,000 (1936); Glasgow, Scotland, 1,126,000 (1938); Birmingham, 1,029,700; Liverpool, 836,300; Manchester, 736,500; Sheffield, 518,200; Leeds, 491,880; Edinburgh, Scotland, 468,500 (1938); Belfast, Northern Ireland, 438,112; Hull, 319,400; Bradford, 289,510; Newcastle-on-Tyne, 290,400; Stoke-on-Trent, 272,800; Nottingham, 278,800; Leicester, 262,900; Portsmouth, 256,200; Croydon, 242,300; Cardiff, Wales, 224,850; Plymouth, 210,460; Salford, 201,800.

National Defense. See EUROPEAN WAR; MILITARY PROGRESS; NAVAL PROGRESS.

Education and Religion. For the school year 1937-38, there were in England and Wales 21,678 elementary schools with an average attendance of 4,526,701; in Scotland, 2898 primary schools, with an average attendance of 567,220. For secondary education, there were in England and Wales 1393 grant-aided schools with 466,245 pupils; in Scotland, 252 secondary schools with 151,988 students. Attendance at industrial and commercial schools in England and Wales was: Full time, 49,057; part time, 1,157,179. The 11 universities in England had 40,444 students in 1938-39; the four Scottish universities, 10,364; and the University of Wales, 2935 students.

The Church of England (q.v.), with an Episcopal form of government, and the Church of Scotland (Presbyterian) are the "established religions" in England and Scotland, respectively. Recent statistics of "full members" of leading denominations in England and Wales were: Anglican, 2,294,000; Methodist, 1,244,374; Congregational, 494,199; Baptist, 401,175; Calvinistic Methodist, 272,935. The number of Roman Catholics was estimated at 2,361,504 in 1937. The Church of Scotland had 2588 congregations and 1,288,571 full members on Dec. 31, 1936; the Roman Catholic Church in Scotland, 614,205 adherents.

Agriculture. In 1938 arable land totaled 12,957,000 acres (21.7 per cent of total area); permanent grass, 18,798,000 acres; orchards and small fruit, 319,000 acres. The value of agricultural production in England and Wales in 1937-38 was £223,500,000 (livestock and products, £154,400,000; farm crops, £35,300,000; fruit, vegetables, and miscellaneous crops, £33,800,000). Wheat production in 1939 totaled 1,619,500 metric tons in England, Scotland, and Wales. The yield of other crops for the entire United Kingdom in 1938 was: Barley, 42,199,000 bu.; oats, 139,419,000 bu.; potatoes, 190,974,000 bu.; turnips and swedes, 10,924,000 long tons; sugar beets (excluding Northern Ireland), 2,239,000 long tons; beet sugar in 1938-39 (excluding Northern Ireland), 336,000 long tons; hops (England and Wales only), 28,784,000 lb.; hay, 6,127,000 long tons. Livestock statistics for the United Kingdom in 1939 were: Cattle, 8,875,000; sheep, 26,904,000; swine, 4,390,000; horses (in Great Britain on farms), 1,076,000; poultry, 69,119,000. The wool clip as in the grease was about 108,700,000 lb. in 1938.

Mining and Manufacturing. Mineral and metallurgical production of the United Kingdom in 1938 was (in metric tons): Coal, 231,875,000; iron ore, 3,615,000; pig iron and ferro-alloys, 6,871,000; steel ingots and castings, 10,561,000; copper, 7200; aluminum (smelter production), 23,000; tungsten ore, 84,000 in 1937; lead ore, 26,800

in 1937; zinc (smelter production), 63,000 in 1937. The production of alcoholic spirits was 58,011,000 U.S. gal. in 1938; beer, 1,066,775,000 gal. Vessels (of 100 or more tons) launched in 1938 aggregated 1,030,000 gross tons. A total of 447,561 motor vehicles were manufactured in 1938 (342,390 passenger cars and 105,171 trucks and buses). Rayon manufacture was 48,285 metric tons.

Fisheries. During 1937 the fisheries of England and Wales landed 851,825 tons of fish valued at £11,951,195 and those of Scotland 235,083 tons valued at £3,422,178.

Foreign Trade. Recent trends in British foreign trade are shown in the accompanying table.

BRITISH FOREIGN TRADE^a
[In thousands of pounds sterling]

Calendar year	Imports ^b	Exports British products ^c	Re-exports (imported merchandise) ^d	Total exports ^e	Excess of imports
1929 ..	1,220,765	729,349	109,702	839,051	381,714
1932 ...	701,670	365,024	51,021	416,045	285,625
1937 ...	1,027,824	521,391	75,134	596,525	431,299
1938 ...	920,438	470,883	61,608	532,491	387,946
1939 4...	885,944	438,806	46,000	484,806	401,138

^a Not including bullion and specie movements. ^b C. i. f. value. ^c F. o. b. value. ^d Provisional figures.

Foodstuffs accounted for nearly half of Great Britain's purchases in 1938, other leading imports being: Non-ferrous metals and manufactures, £49,847,707; manufactured oils, fats, etc., £44,123,348; wood and timber, £42,900,021; raw wool and woolen rags, £42,693,710; oil seeds, fats, etc., £30,610,925; cotton, £29,586,905; tobacco, £23,344,359; machinery, £21,838,190. The chief exports were: Machinery, £57,906,966; cotton yarns and manufactures, £49,684,368; vehicles (including locomotives, ships, and aircraft), £44,639,716; iron and steel and associated manufactures, £41,598,968; woolen and worsted yarns and manufactures, £26,815,716; chemicals, drugs, dyes, and colors, £22,048,681. In 1938 the United States supplied 12.8 per cent of all British imports, Canada 8.5, Australia 7.8, India and Ceylon 7.4, New Zealand 5.1, Argentina 4.2, Denmark 4.1, Germany 3.3. Of the 1938 exports of British products, India and Ceylon purchased 8.5 per cent, South Africa 8.4, Australia 8.1, Canada 4.9, Germany 4.4, United States 4.3, Ireland 4.3, New Zealand 4.1. See IMPORTS AND EXPORTS.

Finance. Budget operations for the fiscal years ending March 31 are shown in the accompanying table.

UNITED KINGDOM: BUDGET OPERATIONS

Years ending March 31	Receipts	Expenditures	Balance
1932-33 ..	£827,031,000	£859,310,173	- £32,279,173
1933-34 ...	809,379,149	778,231,289	+ 31,147,860
1934-35 ...	804,629,050	797,067,171	+ 7,561,879
1935-36 ...	844,775,000	841,834,000	+ 2,941,000
1936-37 ...	896,596,194	902,193,385	- 5,597,191
1937-38 ...	948,660,000	919,874,000	+ 28,726,000
1938-39 ...	1,006,235,000	1,018,949,000	- 12,714,000
1939-40* ...	942,600,000	942,444,000	+ 156,000

* Estimates

At the end of September, 1939, the estimates for 1939-40 were revised. Receipts at that time were expected to yield £54,000,000 less than originally anticipated, but increased taxation was estimated to bring the total of Ordinary Revenue to £995,000,000 while an additional £938,000,000 was to be borrowed, in order to meet total estimated expenditures of £1,933,341,000 of which £1,249,000,000

represented defense expenditures. The total net public debt on Mar. 31, 1939, amounted to £8,163,289,000. The principal foreign obligation was the debt of £897,534,000 owed to the United States Government. The total floating debt on Dec. 31, 1939, was £1,535,150,000. The average exchange value of the pound sterling was \$4.9440 in 1937, \$4.8894 in 1938, \$4.4354 in 1939.

Shipping. The British merchant marine on June 30, 1939, aggregated 21,001,925 gross tons. It consisted of 7203 vessels of 17,781,000 gross tons on June 30, 1938. A total of 68,376,000 net registered tons entered the ports of the United Kingdom in the foreign trade in 1938. The national income from shipping in 1938 was estimated at £100,000,000.

Railways, etc. There were 20,162 miles of railway line open in Great Britain on Jan. 1, 1939 (51,000 miles of track). The gross receipts in 1938 totaled £159,709,000 of which £53,061,000 represented passenger fares. Net revenue for the year was £28,984,000. Roads and highways (1939) of the United Kingdom totaled 178,904 miles (see ROADS AND STREETS). Fourteen British air lines operated 74 scheduled services in August, 1939. The total length of air routes, after elimination of duplications, was 30,624 miles; about 21,020 miles of this was operated by Imperial Airways while British Airways operated over 2662 miles and 12 local companies shared the remainder. Total distance flown by all British civil aircraft in 1938 was 13,556,000 miles; passenger miles were 54,267,000; freight ton-miles, 904,000; mail ton-miles, 9,335,000.

Government. The United Kingdom of Great Britain and Northern Ireland is a limited monarchy, with an unwritten constitution, under which final legislative, judicial, and administrative authority is vested in a Parliament of two houses, acting through a cabinet drawn from its members. The House of Commons consists of 615 members, elected by universal male and female suffrage on the basis of one member for every 70,000 of population. The House of Lords in 1938 had 785 members, including 24 minors not seated, who are variously selected—by heredity, appointment, by virtue of office, and by election.

The elections of November, 1935, gave the National Government 431 out of the 615 seats in the House of Commons. The standing of the government parties toward the end of 1939, modified slightly by by-elections, was as follows (names of leaders in parentheses): Conservatives (Neville Chamberlain), 374; Liberal National party (Sir John Simon), 32; National Labor party (Malcolm MacDonald), 7; Independent Nationals, 5; total, 418. The Opposition was made up as follows: Labor party (Clement R. Attlee), 164; Independent Labor (James Maxton), 3; Liberal party (Sir Archibald Sinclair), 18; Independents, 11; Communists, 1; total, 197.

The War Cabinet formed Sept. 3, 1939, was composed as follows: Prime Minister and First Lord of the Treasury, Neville Chamberlain (C.); Foreign Affairs, Viscount Halifax (C.); Chancellor of the Exchequer, Sir John Simon (L. Nat.); Lord Privy Seal, Sir Samuel Hoare (C.); War, L. Hore-Belisha (Lib. Nat.); Co-ordination of Defense, Lord Chatfield; Air, Sir Kingsley Wood (C.); Admiralty, Winston Churchill (C.); Minister without Portfolio, Lord Hankey. The other Ministers were: Lord President of the Council, Earl Stanhope (C.); Lord Chancellor, Viscount Caldecote (C.); Home Secretary and Minister of



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BRITAIN'S WAR PREPARATIONS

Top. A group of youths called for military training under the Conscription Act passed by the House of Commons Apr. 27, 1939. *Center.* Children leaving London during the large-scale government-directed evacuation of the capital that marked the first days of the European War. *Bottom.* The Chamberlain Cabinet, as reorganized on a war basis in September, 1939. Seated, left to right: Lord Halifax, Foreign Secretary, Sir John Simon, Chancellor of the Exchequer, Neville Chamberlain, Prime Minister; Sir Samuel Hoare, Lord Privy Seal; Admiral of the Fleet Lord Chatfield, Minister for Co-ordination of Defense. Standing, left to right: Sir John Anderson, Minister for Home Security, Lord Hankey, Minister without Portfolio; Leslie Hore-Belisha, War Minister, Winston Churchill, First Lord of the Admiralty, Sir Kingsley Wood, Air Minister, Anthony Eden, Minister for Dominions; Sir Edward Bridges, Permanent Secretary and Secretary of the War Cabinet.



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THE KING VISITING WESTERN FRONT

George VI (in left foreground) inspecting British forces during his tour of the war front in France early in December, 1939



Courtesy RCA Communications, Inc , and Acme News Photos

CANADIAN TROOPS ARRIVING IN ENGLAND, DECEMBER, 1939

This photograph, transmitted by radio from Europe, is typical of the improved quality noted in radiophotos during the year

Home Security, Sir John Anderson (C.); Dominion Affairs, Anthony Eden (C.); India and Burma, Marquess of Zetland (C.); Colonies, Malcolm MacDonald (Nat. Lab.); Chancellor of the Duchy of Lancaster and Minister of Food, W. S. Morrison (C.); Scotland, John Colville (C.); Trade, Oliver Stanley (C.); Education, Earl de la Warr (Lib. Nat.); Health, Walter Elliot (C.); Labor and National Service, Ernest Brown (Lib. Nat.); Supply, E. Leslie Burgin (Lib. Nat.); Agriculture and Fisheries, Maj. Sir Reginald Dorman-Smith (C.); Transport, Capt. Euan Wallace (C.); Information, Lord Macmillan; Economic Warfare, Ronald Hibbert Cross (C.); Works, Herwald Ramsbotham (C.); Postmaster-General, G. C. Tryon (C.); Attorney-General, Sir Donald Bradley Somervell (C.); Solicitor-General, Sir Terence J. O'Connor (C.); Lord Advocate, T. M. Cooper (C.); Solicitor-General for Scotland, J. S. C. Reid (C.); Financial Secretary to the Treasury, Capt. H. Crookshank (C.); Pensions, Sir Walter James Womersley (C.); Paymaster-General, Earl Winterton (C.). See *History* for other changes during 1939.

HISTORY

After 10 years of vacillation and of retreat before the aggressively expansionist diplomacy of Germany, Italy, and Japan, the British Government in March, 1939, scrapped its policy of appeasing Germany and on September 3 entered into another armed struggle with Hitler's resurgent Reich. See *EUROPEAN WAR*.

Foreign Policy. Disillusionment with the Munich "peace with honor," achieved by Prime Minister Chamberlain at the expense of Czecho-Slovakia on Sept. 29, 1938, was widespread in Britain by the end of that year (see 1938 *YEAR BOOK*, p. 305). Events early in 1939 convinced virtually all elements of the British people, and of the Chamberlain Government, that Hitler aimed at the military domination of Europe and that this aim directly endangered the safety of the British Empire. See *GERMANY* under *History*.

This danger was emphasized by the close diplomatic co-operation between Germany, Italy, and Japan in well-timed assaults upon British interests in various parts of the world. Hitler's bellicose speeches, the activities of German and Italian armies in Spain, Japanese attacks upon British subjects and their properties in China, and Mussolini's seizure of Albania were regarded in Britain as bitter fruits of the Munich capitulation. But it was Hitler's military occupation of Bohemia and Moravia on March 15, more than any other event, that led Prime Minister Chamberlain to reverse Britain's historic foreign policy by concluding military alliances with Poland and Turkey and guaranteeing the independence of Greece and Rumania. See those countries and Czecho-Slovakia under *History*.

The "Stop-Hitler" Coalition. In building a coalition designed to check further aggressions in Europe, Chamberlain received effective co-operation and support from Premier Daladier of France. The first step was taken March 31 when the British Government promised to go to Poland's aid if the latter country decided to resist any German action clearly threatening its independence. The crucial decision as to whether German action called for Polish armed resistance and British intervention was left in the hands of the Polish Government. A permanent Polish-British mutual assist-

ance pact was signed August 25, a week before the outbreak of the German-Polish war.

On April 13, a week after Italy invaded Albania, Chamberlain announced that Britain had agreed to aid Greece and Rumania if their independence was "clearly threatened" and they "respectively considered it vital to resist with their national forces." On May 12 Britain and Turkey agreed to aid one another "in the event of an act of aggression leading to war in the Mediterranean area." This pledge was affirmed in an Anglo-Turkish military alliance concluded October 25.

The British and French Governments also sought to enlist the Soviet Union in their anti-German coalition. These negotiations were begun in Moscow in April—mainly at French insistence—and ended with the sensational announcement of the German-Soviet non-aggression pact, signed on August 24. The British and French Governments both deeply distrusted the Soviet Government's motives, and were unwilling to give it the free hand in the Baltic states and in Poland that Stalin won from Hitler. Nevertheless the Soviet-German rapprochement was a severe blow to the "stop-Hitler" coalition. It scaled the fate of Poland and forced Rumania, Greece, Turkey, and possibly other potential Anglo-French allies to avoid participation in the conflict during its first phase. On the other hand, the Hitler-Stalin rapprochement shattered the unity of the anti-Comintern powers. It powerfully influenced Japan, Italy, Spain, Hungary, and Bulgaria in their refusal to enter the war on Germany's side.

Alliance with France. With the rapid conquest of Poland, the "stop-Hitler" coalition was reduced to Britain and France, although the conclusion of the Turkish alliance in October assured them additional allies if the war spread to the Balkans and the Mediterranean. Anglo-French collaboration became progressively closer. It was marked by Chamberlain's pledge to support France against Italian territorial demands, by President Lebrun's visit to London in March, by their close diplomatic unity throughout the year, by the merging of their military, naval, and air forces upon the outbreak of war, and by their subsequent agreements for co-operation in the financial and economic fields (see *FRANCE* under *History* for details).

Negotiations with Germany. From the beginning of 1939 Britain and France followed the dual policy of preparing to resist further aggressions by armed force and of seeking to reach an understanding with their potential enemies. Until the German invasion of Poland on September 1 they continued to work for a peaceful settlement of German-Polish issues, although stipulating that Germany must not impose a settlement by force or threat of force, as was done at Munich.

Upon the announcement of the Soviet-German pact on August 22 the British Government took precautionary military measures. On the same day Prime Minister Chamberlain warned Hitler that Britain's pledge to Poland still stood. He urged that both Poland and Germany suspend "press polemics" and other incitements to war, and that they open negotiations for a settlement to be guaranteed by the other powers. In reply to this warning, delivered by letter to Hitler at Berchtesgaden by the British Ambassador, Sir Neville Henderson, on August 23, Hitler replied that nothing short of a complete change in British policy could "now convince him of the British desire for good relations." His formal reply to Chamberlain, dated the same

day, stated that the Reich had "definite interests which it is impossible to renounce," including Danzig and the Polish Corridor.

On August 25 Hitler sent Chamberlain another communication stating that "Poland's actual provocations have become intolerable," and that Germany was determined "to abolish these Macedonian conditions on her eastern frontier." He said the pact with Russia would make Germany "secure economically for the longest possible period of war." He offered to "accept" the British Empire and "to pledge himself personally for its continued existence and to place the power of the German Reich at its disposal" provided his "limited" colonial demands were fulfilled. If Britain rejected this offer, there would be war. To the British Ambassador he declared that all he required for an agreement with Poland "was a gesture from Britain to indicate that she would not be unreasonable."

After consulting France and Sir Neville, who had returned to London with Hitler's message, the British Government replied in a note dated August 28 that it could not "for any advantage offered to Great Britain, acquiesce in a settlement which put in jeopardy the independence of a state" to which a British guarantee had been given. The note again urged direct Polish-German negotiations for a peaceful settlement and declared that failure to reach a just settlement would plunge Britain, Germany, and possibly the whole world into a calamitous war. Sir Neville, presenting the note to Hitler that evening, said Britain wanted friendship with the Reich "but only on the basis of a peaceful and freely negotiated solution of the Polish question."

Hitler replied that Poland would never be "reasonable" so long as she had a pledge of Anglo-French assistance, and threatened to "annihilate" her. He asked Sir Neville if Britain "would be willing to accept an alliance with Germany," and warned that Britain would make a great mistake if she thought he was bluffing. Sir Neville replied that Britain was fully aware of the fact and was not bluffing either.

On August 29 Hitler in a note to Chamberlain said the Reich was prepared to accept the British proposal for direct negotiations with Poland, although "sceptical of the outcome." However he said Germany could not give or participate in guarantees covering any territorial rearrangement without the Soviet Union. The note declared Germany "never had any intention of touching Poland's vital interests" or questioning its independent existence. Hitler offered to receive a Polish emissary with full powers to negotiate and said he expected the emissary's arrival the following day (August 30).

London replied through Sir Neville on August 30 that it could not advise Poland to produce in Berlin that day a representative with full powers to decide the issues at stake. It suggested instead that Berlin follow the "normal procedure" of handling its proposals to the Polish Ambassador for transmission to the Polish Government. If the proposals offered a reasonable basis for negotiation, the British Government offered to use its influence in Warsaw on behalf of a settlement.

When Sir Neville Henderson called at the German Foreign Office on the night of August 30 to deliver this note, Foreign Minister von Ribbentrop read to him "at top speed" a 16-point program for the settlement of German-Polish issues. It called for immediate return of Danzig to the Reich, retention of Gdynia by Poland, and the turning over to an international commission of the rest of the

Polish Corridor pending determination of its ownership by a plebiscite at the end of one year. The plebiscite was to be confined to persons born in the territory before 1918 or residing there on that date.

Sir Neville asked for the text of these proposals. Von Ribbentrop replied that it was "now too late, as a Polish representative had not arrived in Berlin by midnight." The circumstances under which the German proposals were presented led the British and Poles to charge that they were never intended for any other purpose than to strengthen the German case before world opinion. On August 31 the Polish Government authorized its Ambassador in Berlin to inform the German Government of Poland's acceptance of the British proposal for direct German-Polish negotiations. Von Ribbentrop declined to receive the Polish Ambassador until that evening and then the Ambassador stated that he did not have plenary powers to negotiate a settlement on behalf of his government. Up to the last, the Polish Government apparently suspected that Britain as well as Germany might repeat the Munich procedure and reach a settlement at Poland's expense.

That same evening the German State Secretary informed Sir Neville that Germany could no longer be put off "with empty subterfuges and meaningless declarations." Having waited two days for the arrival of a fully empowered Polish negotiator, the German Government considered its proposals to have been rejected. The note listed the German 16-point program in full—the first time the text had been seen by either the British or Polish Governments. But Hitler had already given the order to attack and at 5 a.m. the next morning the German invasion of Poland began.

Meanwhile the Italian Government and the governments of the Oslo Powers had sought to mediate and avert war. To both of these initiatives, the British and French Governments stated their willingness to continue negotiations with the Reich, provided German troops were withdrawn from Polish soil. No time limit was fixed at first, but public opinion in Britain was now unanimous in demanding that the government fulfill its obligations to Poland immediately. At 9 a.m. on September 3 the British Ambassador notified the German Foreign Office that Britain expected a reply by 11 a.m. to the London Government's formal warning that it would fulfill its pledge to Poland if the invasion was not ended. When no reply was forthcoming by that hour, the British Government issued a formal declaration of war and France followed suit that evening. See *GERMANY and POLAND under History*.

Aid from the Empire. The various British Dominions, colonies, protectorates, and dependencies and even the mandated territories rallied to the British cause in September of 1939 no less willingly than in 1914, although the Dominions were now complete masters of their own policies. Eire remained neutral, although majority sentiment was more favorably disposed toward Britain than in 1914. The South African Parliament overthrew the Hertzog Government when it opposed participation in the war, and entered the struggle under the leadership of the veteran Gen. Jan C. Smuts. Australia, Canada, New Zealand, Newfoundland, and Southern Rhodesia entered the war without dissent from any important group in their populations.

The Indian princes and many other Indian leaders and economic and religious groups showed

their loyalty by contributing men and money, but the powerful Congress party withheld co-operation in default of the immediate granting of Indian self-rule. Declarations of support and gifts of troops, arms, and funds for prosecution of the war poured in from other units of the Empire in all parts of the world. Canada and Australia not only prepared to send troops to fight in Europe and the Near East, respectively, but joined with New Zealand and Britain in the adoption of a far-reaching scheme for marshaling and expanding the Empire's air power, with Canada (q.v.) as the chief training ground. The Empire's industries and economic resources, greatly expanded since the World War, were mobilized for the prosecution of the European conflict. Representatives of the Dominion and Indian governments arrived in London before the end of October to co-ordinate the war efforts of the principal units of the Commonwealth. For the individual contribution of each unit of the British Empire (q.v.), see the separate article on each.

Britain's allies, Egypt and Iraq, likewise severed diplomatic relations with Germany although they did not declare war upon the Reich. Their armies were placed on a war footing with the aid of British armaments, credits, and military instructors.

Relations with Italy. If Prime Minister Chamberlain's appeasement policy had not averted war with Germany, it apparently contributed to the virtual isolation of Hitler when the supreme test came. Anglo-French diplomacy, backed by the growing power of their armaments, was a powerful factor inducing Italy, Japan, Spain, Hungary, and Bulgaria to avoid participation in the conflict on the German side.

Prime Minister Chamberlain paid a visit to Rome on January 11-13, but his conferences with Mussolini proved barren of immediate results. He also seized the opportunity to make a courtesy call upon the Pope. The Italian attack upon Albania in April and the Italo-German alliance in May produced added tension in Anglo-Italian relations. But this tension was greatly eased by the withdrawal of Italian troops from Spain after Franco's victory, and especially by Mussolini's non-intervention in the European War. On October 31 London gave *de facto* recognition to Italy's annexation of Albania, four days after conclusion of an Anglo-Italian accord facilitating closer commercial intercourse.

At the year end Britain and France appeared ready to make substantial concessions to keep Italy neutral; they even expressed some hope of winning her collaboration. At the same time they made formidable preparations to blockade and strangle Italy if Mussolini threw in his lot with the Reich. See *FRANCE* and *ITALY* under *History*.

Danger from Japan. In the Far East, the British and French possessions were less defensible against the threat posed by Japan. Despite the co-ordination of Anglo-French forces in that area, the lack of a battle fleet at Singapore and the exigencies of the European War caused them to beat a slow but steady retreat under the pressure vigorously applied by the Tokyo Government and Japanese military leaders in China. See *CHINA*, *FRANCE*, and *JAPAN* under *History*.

Attitude Toward U.S.S.R. Despite the reluctance of British Conservatives to trust or collaborate with the Soviet Union, the Soviet-German pact of August 24 aroused indignation and some chagrin in London. Taking the position that its pledge to Poland applied only against Germany, the British Government took no positive action

when Soviet troops invaded Poland on September 17, and partitioned that country with the Reich on September 29. On October 3 Prime Minister Chamberlain announced in Parliament that Russo-German collaboration would not change Britain's determination to "put an end to successive acts of German aggression." Indeed some British circles hailed the Russian advance into German spheres of influence as a setback to Hitler's influence and to German morale. On October 11 Britain signed an agreement to barter tin and rubber for Russian lumber.

Negotiations for a permanent trade treaty also were opened, but these were broken off when the Soviet Government, despite British warnings, invaded Finland on November 30. This action was vigorously denounced by British leaders of all groups except the Communist party, but the government still displayed reluctance to break with Moscow and thus force Stalin into close co-operation with the Reich. On December 14 Prime Minister Chamberlain stated that Britain would give what help she could spare to Finland, but that the defeat of Germany remained its primary objective. See *FINLAND* and *UNION OF SOVIET SOCIALIST REPUBLICS* under *History*.

Policy Toward Other Countries. In its struggle with the Reich, Britain brought into action its powerful navy and all the great financial and economic resources of the Empire. A blockade was clamped on Germany and its naval and merchant vessels were swept from the seas. All vessels bound for neutral countries bordering Germany were forced to submit to the Allied contraband control from the beginning of the war, and in November this control was extended to German goods exported from neutral countries in neutral ships.

Before the war started Britain advanced large credits to Poland, Rumania, Turkey, and Greece to aid them in resisting German economic and diplomatic pressures. After war began, the British sought to divert trade from Germany and draw neutrals to the Allied side by concluding trade agreements with Sweden, Yugoslavia, Greece, and Turkey. Surplus products in large quantities were bought up from the Balkan and Scandinavian countries. British relations with the Arab states, which had been endangered by the Arab-Jewish conflict in Palestine (q.v.), were placed on a friendly basis.

Anglo-American Relations. The collaboration of preceding years with the United States (see 1938 YEAR BOOK, p. 305), was extended during 1939. The reciprocal trade treaty of Nov. 17, 1938, went into effect on January 1 with favorable effects upon mutual trade up to the beginning of the European War. On April 6 an Anglo-American agreement for joint control and administration of Canton and Enderbury Islands (q.v.) in the Pacific was announced. Lord Lothian, a close student of American public opinion, replaced Sir Ronald Lindsay as Ambassador to Washington in the summer. On June 23 an agreement for the exchange of British-owned rubber for American cotton was signed in London. The action of the United States Congress on November 2 in repealing the arms embargo opened up "an arsenal of tremendous resources" to the Allies, according to British Minister of Supply. It enabled Britain and France to call upon the great American aircraft industry for thousands of planes to offset Germany's initial superiority in the air.

As the war progressed, however, friction de-

veloped between the British and American governments over the conduct of the Allied blockade. On December 8 Secretary Hull protested the application to American ships and goods of the British decision to seize all exports from Germany. The British Government also declined to recognize the Pan American neutrality zone except under certain conditions (see *NEUTRALITY*; *PAN AMERICANISM*). But these controversies did not impair the diplomatic collaboration of the two powers in the Far East nor the apparent conviction of the Roosevelt Administration that the mutual interests of the two countries were complementary rather than antagonistic.

The Home Front. From January to September the British Government and people were busy making preparations for war in the event that the negotiations with Hitler failed to bring a peaceful solution of European problems. The determination not to countenance another capitulation such as that at Munich was reflected in the virtual unanimity with which a huge £580,000,000 (\$2,725,000,000) armaments bill was approved by Parliament for the year ending in March, 1940. With only five dissenting vote the House of Commons on February 21 agreed to double the government's borrowing capacity to pay defense costs. A supplementary arms budget of July 13 raised the April total to almost £730,000,000. The first war budget, passed at the end of September, estimated revenue at £995,000,000 and receipts from loans of £938,000,000. To secure this increased sum the standard rate of income tax was raised to 37½ per cent of income; estate duties were raised 10 per cent; and surtaxes and other levies were likewise drastically increased.

With a per capita debt burden already twice that of the United States, Britain was faced with a possible transformation of the entire economic system as a result of the armament burden even before the outbreak of war. To meet the danger of a sudden and large-scale attack by land, sea, and air, Britain was gradually forced into somewhat the same type of regimented economy that prevailed in Germany, although none of the totalitarian political and social controls were introduced until after war was certain.

On August 29 Parliament passed the Emergency Powers (Defense) Act, granting the government a virtual dictatorship for the duration of the war. Under this act the government assumed complete authority over all aspects of industrial production, including prices, over agriculture, transportation, communication, and navigation. Parliament remained in session through November, however, and retained its usual powers of control over the government's activities. Among the measures passed or carried into effect with Parliament's consent were the registration of the entire population on September 29; rationing of fuel; introduction of blackouts and the large-scale evacuation of children from the larger cities; government control of foreign exchange transactions and of imports and exports; and the allocation of labor for defense work in accordance with agreements reached jointly by employers and trade union representatives. Profiteering was curtailed by drastic arms profits taxes. A government censorship was instituted for the purpose of preventing leakage of information to Germany but in general the customary civil liberties were maintained within and without the halls of Parliament.

Military Preparations. The steady expansion of defense equipment and plans during the year

was marked by some notable departures from British traditions. Early in March War Minister Hore-Belisha announced that participation in a continental war would begin with the dispatch of 19 divisions (about 300,000 men) to France. On March 29 the Territorial Army (national guard) was ordered doubled by voluntary enlistments. On April 18 the government appointed 12 regional commissioners to assume full control of separate parts of the kingdom if the expected German bombing raids on London disrupted communication with the rest of the country. On April 26 compulsory military training was introduced in Britain for the first time, and ratified by an overwhelming majority of Parliament over Labor's more or less formal opposition. Thereafter there was a steady acceleration of the production of trained men for the defense services, of airplanes, ships and armaments, and of the vast supplies needed for overseas war and home defense. The constructions of bomb shelters and other air raid precautions cost £10,000,000 in London alone up to the end of 1939. By that time the government was spending over £6,000,000 daily on the war. See *EUROPEAN WAR* for other data.

Politics. Prime Minister Chamberlain made several changes in his Cabinet during the year in addition to those listed above under *Government*. Late in January Sir Thomas Inskip was replaced as Minister for Co-ordination of Defense by Admiral of the Fleet Lord Chatfield. There had been strong criticism of the inadequacy of defense preparations. A further reshuffling of the Ministry took place on April 21 without stilling criticism of the government's slowness in pushing war preparations. Late in May the Prime Minister yielded to these criticisms to the extent of establishing a new Ministry of Supply through which armaments contracts obtained priority over peace-time orders. A secret session of Parliament was held December 14 to debate opposition charges that the Ministry of Supply was failing in its job of organizing British industries for the prosecution of the war.

The reconstruction of the government on September 3-4, bringing Winston Churchill and Anthony Eden into the cabinet, was widely popular. As the war progressed, Churchill stood out more and more as the cabinet member most likely to succeed Prime Minister Chamberlain should the latter retire. On September 22 representatives of the principal political parties reached an agreement not to hold parliamentary or municipal elections during the course of the war.

According to a poll taken by the British Institute of Public Opinion early in December 61 per cent of those polled were satisfied with the government's conduct of the war, 18 per cent were dissatisfied, 11 per cent favored stopping the conflict, and 10 per cent voiced no opinion. The only outspoken opposition to the war came from Britain's Communist party, after it recovered from the shock of the Nazi-Soviet pact (see *COMMUNISM*), from Sir Oswald Mosley's Fascist party, and from a few pacifists and some extreme left-wing labor groups. The British Labor party, which in June had once more rejected proposals for a united front with the Communists, pledged its full support to the government in the war with Germany. On November 15 Clement R. Attlee was unanimously re-elected leader of the Labor party in Parliament for the next session. A few by-elections held during the war months returned large majorities for government supporters.

War Aims Dispute. A vigorous debate over

British war and peace aims began immediately after the war. In speeches on October 12 and November 26 the Prime Minister laid down the government's objectives in general terms. On October 12 he said Britain sought no material advantage and wanted nothing from the German people that would injure their self-respect. "We are not aiming," he said, "only at victory but rather looking beyond it to the laying of a foundation of a better international system which will mean that war is not to be the inevitable lot of every succeeding generation." He said the German Government alone stood in the way of such a peace. He called for "righting the wrongs done to Czecho-Slovakia and Poland" and for practical measure to assure the cessation of aggressions by Germany since "no reliance can be placed upon the promises of the present German Government."

The following day the Council of Action for Peace and Reconstruction, a dissident Liberal group headed by former Prime Minister David Lloyd George, attacked this statement as inadequate and vague. On November 26 Chamberlain was slightly more explicit. He stated that Britain's war aim remained to defeat "that aggressive, bullying mentality (in Germany) which seeks continually to dominate other peoples by force . . ." Her peace aims called for a new Europe based on good will and mutual tolerance; adjustment of boundary and other disputes on a basis of equality for all parties; increased trade; the unfettered right of each country to choose its own form of government so long as that government did not pursue an external policy injurious to its neighbors; and the gradual reduction of armaments to the point necessary for maintenance of internal law and order.

See ARABIA, ARGENTINA, AUSTRIA, BELGIUM, BULGARIA, BURMA, CHINA, CZECHO-SLOVAKIA, EGYPT, IRAQ, GUATEMALA, IRELAND (EIRE), IRELAND (NORTHERN), JAPAN, MEXICO, NETHERLANDS, PORTUGAL, RUMANIA, SPAIN, STRAITS SETTLEMENTS, SWEDEN, TURKEY, and URUGUAY under *History*. Also ARMAMENTS, COST OF; CHEMISTRY, INDUSTRIAL; COMMUNISM; EUROPEAN WAR; FASCISM; MILITARY PROGRESS; NAVAL PROGRESS; REPARATIONS AND WAR DEBTS.

GREECE. A Balkan kingdom. Capital, Athens. Greece has an area of 50,270 square miles (mainland, 41,652; islands, 6818), and a population estimated at 7,108,000 in 1939. The 1928 census showed 6,204,684 (urban, 2,058,510). Living births in 1937 numbered 183,868 (26.4 per 1000); deaths, 105,674 (15.2 per 1000); marriages, 45,833 (6.6 per 1000). Estimated populations of the chief cities in 1938 (preliminary) were: Athens, 499,360; Piraeus, 287,800; Salonika (Thessaloniki), 267,870; Patras, 73,840; Kavalla, 55,280; Volos, 51,000; Candia (Irakleion), 43,550; Xanthi, 37,550; Canea, 36,810; Corfu (Kerkyra), 34,740.

National Defense. Military service is compulsory. The active army on Nov. 1, 1939, numbered 140,000 officers and men (455,000 in reserve). The air force consisted of 1660 men, with 4500 trained reserves and 120 aircraft. The navy comprised 1 armored cruiser, 1 cruiser mine layer, 8 torpedo boat destroyers, 12 torpedo boats and 6 submarines. See the articles on MILITARY PROGRESS and NAVAL PROGRESS.

Religion and Education. The school attendance in 1936-37 was: Elementary, 967,588; secondary, 90,709; university, 10,561. Illiteracy is high. The 1929 census returns showed 5,961,529 members of the Greek Orthodox Church, 126,017

Moslems, 72,791 Jews, 35,182 Roman Catholics and 9003 Protestants.

Production. Approximately 54 per cent of the working population are supported by agriculture and fishing, 16 per cent by industry and 8 per cent by commerce. There were 6,087,000 acres of cultivable land in 1938. The value of agricultural production in 1937 was 30,172,800 drachmas. Yields of the chief cereals in 1939 were (in metric tons): Wheat, 960,000; barley, 217,700; rye, 62,500; oats, 152,600; corn, 172,500. Other leading crops in 1938 were: Potatoes, 5,254,000 bu.; currants and raisins, 416,074,000 lb.; figs, 71,987,000 lb.; wine (must), 108,314,000 gal.; olive oil (1938-39), 24,780,000 gal.; tobacco, 91,656,000 lb.; cotton (ginned), 32,026,000 lb. (1938-39). The 1937 livestock returns showed 1,065,000 cattle; 465,000 swine; 8,451,000 sheep; 5,288,000 goats; 969,000 horses, mules and asses.

The value of mineral production in 1937 was 626,773,000 drachmas. Factory production, 1938 (excluding wine, olive oil and wheat milling), was 13,552,000,000 drachmas. In 1938, 267 metric tons of rayon, 250 metric tons of silk and 21,000 metric tons of paper were produced. Chief minerals (in metric tons) in 1937 except as otherwise indicated were: Chromite, 19,900; zinc, 10,000; iron ore, 145,000; iron pyrites, 245,000 (1938); lead, 9300; lignite, 131,000; nickel, 1000; bauxite, 150,000 (1938); superphosphates of lime, 5800 (1938); sulphuric acid, 43,000 (1938).

Foreign Trade. In 1939 imports for consumption were valued at 12,275,000,000 drachmas (14,761,000,000 in 1938) and general exports totaled 9,200,000,000 drachmas (10,149,000,000 in 1938). Among the chief exports were tobacco (40,000 tons valued at 3,978,000,000 in 1939), olive oil, raisins, olives, wine, figs, and citrus fruits. Germany supplied 28.8 per cent of the 1938 imports; the United Kingdom, 13.0 per cent; Rumania, 10.3 per cent; and the United States, 7.2 per cent. Of the exports, Germany took 38.5 per cent; the United States, 17.1 per cent; with the United Kingdom and Italy the third and fourth best customers. See IMPORTS AND EXPORTS.

Finance. Budget estimates for the fiscal year ending Mar. 31, 1940, placed receipts at 13,077,000,000 drachmas and expenditures at 14,654,000,000 drachmas. Revenue estimates for 1938-39 totaled 13,338,000,000 drachmas; expenditures, 15,679,000,000. Appropriations for the Ministries of War, Marine and Air represented 26 per cent of the 1939-40 expenditures. The public debt on Dec. 31, 1938, was 81,942,000,000 drachmas, including the railway debt. Of this total, about 68,000,000,000 drachmas represented the external debt, with foreign currency converted at current rates. The average exchange rate of the drachma was \$0.0091 in 1937, \$0.0090 in 1938, \$0.0082 in 1939.

Transportation. The length of railway lines in operation on Mar. 31, 1938, was 1870 miles, including 944 miles of state railway. During the year ending Mar. 31, 1938, all railways carried 31,620,000 passengers and 2,357,914 metric tons of freight. Gross revenues were 888,815,000 drachmas. Highways extended 8060 miles in 1939 (see ROADS AND STREETS). At the end of 1939 there were four air services in operation covering 749 route miles. Athens is an important aviation center, having connections with French, British, Italian, German, and other airlines. During 1938, 2992 vessels of 5,475,764 net registered tons entered Greek ports in the foreign trade. The Greek merchant marine on June 30, 1939, consisted of 607

vessels (of 100 tons or over) with a gross tonnage of 1,780,666. The Corinth Canal, which was closed for nearly a year as a result of landslides, was reopened on Oct. 2, 1939. With the construction in 1939 of a new international radio transmitting center near the village of Spata, the Eastern Telegraph Co., Ltd., a British concern, acquired a monopoly of all international telegraphic and wireless communications not operated by the Greek Government itself.

Government. The government in force in 1939 was a dictatorship in the hands of Premier John Metaxas, acting as the servant of the Crown. This dictatorship came into existence on Aug. 4, 1936, with the support of royal decrees dissolving Parliament, suspending constitutional guarantees, abolishing the political parties, and subjecting the press to supervision and censorship. At the end of July, 1939, Metaxas was declared dictator for life. The sovereign power resides in the King of the Hellenes. The King in 1939 was George II, who succeeded to the throne in 1922, fled from Greece, Dec. 18, 1923, in the Venizelist revolution, was succeeded by a republic, Mar. 24, 1924, and returned to the throne, Nov. 25, 1935, in accordance with the result of a plebiscite, to rule under the restored monarchic constitution of 1911.

HISTORY

Domestic Affairs. The government of General Metaxas strengthened its position in Greece during 1939 in a number of ways. The handling of strained relations with Italy, over the Albanian frontier, as related below, improved its standing with the population in April. It proceeded immediately to deal with an alleged new Venizelist movement in Athens. Themistocles Tsatsas, a liberal and a lawyer of high standing, was arrested for attempting to present to King George a written request for the admittance of some of the excluded leaders to the cabinet and was sent into exile, about the middle of April. In July E. J. Tsouderos, accused of secret correspondence with some of the leading Greek émigrés while serving as governor of the Bank of Greece, was arrested, with some 15 other officials of the bank, and a number of them were sent into exile. On October 22 it was announced that about 200 individuals in Samos had been seized by the police on charges of anti-dictatorial activity. A Communist former member of Parliament, Michael Kases, was arrested, November 15, and the authorities declared that they had found, in Athens and on a Greek vessel, concealed printing presses for producing Communist propaganda. The course taken by the Russian government in Poland, stirring up popular fear of a Russian drive toward the Aegean, had lately brought communism into keen dislike. While the incidents of war in Europe thus afforded the government opportunities to act against its opponents, support from Great Britain and France, against possible invasion, helped give the government the aspect of a source of strength in time of peril.

Steps were taken to assure the somewhat more distant future of the government. Metaxas added to his other ministerial functions, in January, that of directing education; thus he acquired direct control of the dissemination of ideas among the pupils of the schools. With regard to rule over the trade unions, these had been put on a virtual corporate basis. The arbitration of disputes with employers was compulsory. Strikes and lockouts were forbidden. The country had received a sys-

tem of social insurance. Minimum wages were in effect. The government promoted an association to teach the better use of leisure among the population. Obtaining from Great Britain a credit for purchases in the United Kingdom, the government continued to strengthen the country's defenses. It put into strict application, October 1, a law of 1937 requiring military conscripts to give 24 months of service. The Greek National Youth, an organization promoted by the government in order to effect control of the adolescent group, was aided in January with contributions obtained from individuals by the personal solicitation of the dictator. In December the establishments of the Young Men's Christian Association in Athens and Salonika were dissolved and their properties were taken for the Youth organization's use.

Foreign Relations. The government had to deal throughout the year with the severe stresses, in the external relations of southeastern Europe, responsive to the violent disturbance in divers parts of the continent. It witnessed with alarm the appropriation, in April, of its own small neighbor, Albania, by Italy, and it thus acquired the hazard of an Italian frontier. Greece also faced the possibility, after the German and Russian conquests in Poland, of a Russian invasion of the Balkan region. External pressure compelled Greece to provide for its own defense by taking sides. In doing so it turned to the associated powers from which it had least to fear, Great Britain and France.

The Italian invasion of Albania, April 7, brought to a head negotiations at Athens, in which the British sought naval privileges and aeronautic bases in Greek territory and offered Greece protection from attack. An understanding was apparently reached by April 12, and the British government announced on the 13th that it would defend Greek territorial integrity; the French premier simultaneously expressed his country's identical intention. The Italian government, on the night of the 11th, aware of the imminence of such declarations, expressed in a note to Athens its assurance that Greek territory would be respected. Athens, apprehending that the Italian invasion might not stop at the Greek border, had increased its forces in the area, and the extra guards were maintained until some months later.

The new Greek understanding with Great Britain, though its details were not fully published, was seen to involve Greek grants of facilities to British naval forces and British grants of credit to the Greek Government from time to time, whether for strengthening Greek defenses or for economic support. The Greek press, expressing only what the government wished expressed, declared for Greek neutrality toward warring European nations. Nothing indicated that Greece had undertaken to lend armed aid to its protectors. In July Greece reportedly obtained a British credit of £2,040,000 for the purchase of British goods.

While the understanding of April with Great Britain had been formed under the pressure of Italy's entry into the Balkan peninsula, it held good during the second and in some respects equally serious crisis of September, involving Germany. Greece remained neutral in the war against Germany; but though the German market normally took about two-fifths of the Greek exports, Greece maintained the special relations established with Great Britain, now Germany's adversary. The government's pro-Ally policy was strengthened by the conclusion of the Anglo-French military alliances with Turkey, which was already an

ally of Greece. The government at Athens announced, late in September, that a set of forts along the Albanian and Bulgarian frontiers had been completed.

See also **ARCHAEOLOGY**; **BALKAN ENTENTE**; and **ALBANIA**, **BULGARIA**, **GREAT BRITAIN**, **ITALY**, **ROMANIA**, **TURKEY**, and **YUGOSLAVIA** under **History**.
GREEK ORTHODOX CHURCH. See **RELIGIOUS ORGANIZATIONS**.

GREEN, COL. E. H. R. See **MASSACHUSETTS**; **SUPREME COURT**.

GREENE, **FREDERICK STUART**. An American engineer and public official, died in Washington, D. C., Mar. 26, 1939. Born in Rappahamock Co., Va., Apr. 14, 1870, he was educated at the Virginia Military Institute (1890). He worked as an engineer on the Central R.R. of Georgia (1890-91), with the cable railways in Washington and New York (1892-93), as an assistant engineer with the U.S. Engineers (1894-95), and as general superintendent of John Monks & Co., dock builders (1896-1900). Thereafter he was associated with the American Manufacturing Co. (1900-05), and the Waterproofing Co. of New York City (1905-17). Greene saw service with the 302d Engineers in France from April 14, 1918 to the close of the War and participated in the Oise, Aisne, and Argonne offensives.

In 1919 he was appointed commissioner of highways for the State of New York by Governor Smith, but with a new administration in 1921 he retired to private life as president of Greene-Huie Co., engineers and contractors. With the reelection of Smith in 1923, Colonel Greene was again appointed commissioner of highways, and in 1925 he was placed in charge of the newly-created position of Superintendent of Public Works for the State of New York, which included canals and waterways, public buildings, all State engineering and architecture, as well as highways. He was reappointed to this post by successive governors and shortly after being reappointed for the 10th time, he resigned on Mar. 23, 1939 because of ill health. Colonel Greene also was chief engineer of Whiteface Mt. Highway Commission and of Grand Island bridges, supervisor of the N. Y. State Roosevelt Memorial, and chairman of the Rockland-Westchester Hudson River Crossing Authority. He wrote *The Blue Book of Rope Transmission* (1901), and several short stories.

GREENLAND. A Danish insular colony near northeastern Canada, extending from 50° 49' N. to 83° 39' N. The interior consists of a plateau about 10,000 ft. high, covered with an ice cap of 1000 ft. in thickness. Total area 839,800 square miles, of which some 120,849 square miles are part free from ice. Population (1938 estimate), 17,000 (16,000 Eskimos and about 400 Danes). Julianehaab (3500 inhabitants), Godthaab (1300), Godhavn, and Angmagssalik are the main settlements.

Cryolite, graphite, seal oil, whale oil, cod liver oil, fish, furs, skins, walrus ivory, and eiderdown are the chief products. Commerce is a monopoly of the Danish government. In 1937, imports to Denmark, 2,428,000 crowns; exports to Denmark, 6,794,000 crowns. For 1936-37, revenue was 3,117,000 crowns; expenditure, 4,959,000 crowns (crown averaged \$0.2219 for 1936; \$0.2207 for 1937). The administration of Greenland, which is divided into the three inspectorates of North Greenland (capital, Godhavn), South Greenland (capital, Godthaab), and East Greenland, is vested in

a director (appointed by the King) in Copenhagen, Denmark, who is aided by inspectors and local assemblies in the colony. See **POLAR RESEARCH**.

GRENADA, grê-nâ'da. A British island colony in the Windward Islands group of the West Indies. Area, including South Grenadines, 133 square miles; population (Jan. 1, 1938, estimate) 88,201. Capital, St. George's (4629 inhabitants in 1921). Principal products are cacao, nutmegs, mace, limes, sugar, bananas, cotton, and coconuts. In 1937 imports were valued at £367,707; exports, £362,075. For 1937 revenue totaled £177,342; expenditure, £177,900; net public debt, £371,536. The colony is administered under the Governor of the Windward Islands (who resides at St. George's, Grenada) and has a legislative council of 16 members (8 official, 3 nominated and 5 elected). See **WINDWARD ISLANDS**.

GRINNELL COLLEGE. A coeducational, nonsectarian institution of higher learning in Grinnell, Ia., founded in 1846. The enrollment for the year 1939 was 750. There were 68 faculty members. The productive funds amounted to \$1,510,000 and the income for the year was \$364,930. The library contained 110,000 volumes. President, John Scholte Nollen, Ph.D.

GROENER, GEN. **WILHELM**. A German army officer and politician, died in Potsdam, May 4, 1939. Born in Ludwigsburg, Nov. 22, 1867, he entered the German army in 1884 and was promoted through the ranks until at the outbreak of the World War he was chief of the railway department of the General Staff with the rank of colonel, and as such organized railway transport and supply. In 1916 he was a lieutenant-general and chief of the war council of the Prussian War Ministry, and in the following year he commanded a division in France. In 1918 he was chief of the General Staff Army group at Kiev and later in the year succeeded General Ludendorff as General Quarter Master. He retired from military service in the following year.

Upon his retirement General Groener entered political life and was Reich minister of communications during 1920-23. He became minister of defense in 1928 and received the additional post of minister of the interior in 1931 in order to concentrate the control of the army and police. As such he was director of the political strategy by which the government hoped to put down the National Socialists, and he advocated the suppression of the Nazi storm troops, which were disbanded on Apr. 13, 1932. A month later he lost the interior post and later in the year, upon the fall of the government, that of defense.

He wrote *Der Weltkrieg und seine Probleme* (1920), *Das Testament des Grafen Schlieffen* (1927), and *Der Feldherr wider Willen* (1930).

GUADELOUPE, ga'de-lôop'. A French West Indian colony comprising the main islands of Guadeloupe (Basse-Terre and Grande-Terre), and the dependent islands of Les Saintes, Désirade, St. Barthélemy, St. Martin, and Marie Galante. Total area, 688 square miles; population (1938 estimate), 310,000. Chief cities: Basse-Terre, capital (13,638 inhabitants) and Pointe-à-Pitre (43,551). The annual production of chief crops in metric tons is: Cane sugar, 58,000 (1938-39); cacao, 100 (1937-38); coffee, 500 (1938-39). Other products are rum, bananas, vanilla, logwood, and manioc. In 1938 the estimated value of merchandise imports (in old U. S. gold

dollars) was \$5,000,000 (1937, \$5,300,000); exports, \$7,000,000 (1937, \$7,200,000). There were 596 miles of road in 1938. The budget for 1938 was balanced at 69,527,243 francs (franc averaged \$0.0288 in 1938). The colony is under a governor who is assisted by an elected council and is represented in the French parliament by one senator and two deputies.

GUAM. An insular possession of the United States; the largest and most populous island of the Marianas group, in mid-Pacific. It lies about 5100 miles from San Francisco, 3300 from Honolulu, 1350 from Yokohama, and 1500 from Manila. Area, 225 square miles; population (July 1, 1939), 22,843, which included 21,199 native-born, 778 foreign-born, and 866 members of the naval establishment. Capital, Agana (pop., about 12,000).

The native population is mainly of Chamorro stock. The languages in use are English, Spanish, and Chamorro. Public instruction through high school grades is available to all children who make satisfactory progress. Commencing with the seventh grade, attendance is limited by competitive examination. The number of enrolled pupils in the public schools averaged 4217 for the year 1938-39. Most of the pupils were in native schools, taught by native teachers. An American school, for children of non-natives, was maintained. Copra, coconut oil, alligator pears, and kapok are exported. Products grown for the domestic market are cacao, coffee, rice, sugar, corn, sweet potatoes, and fruits. Exports for the year ending June 30, 1939, amounted to \$124,178, and were mainly of copra. Imports totaled \$659,650.

Guam is a United States naval station; its Governor, who is also the commandant of the station, is a naval officer commissioned by the President. Governor in 1939, Capt. James T. Alexander, U.S. Navy. An elective native Congress consisting of a House of Council (16 members) and a House of Assembly (27 members) has only an advisory voice in the government. Planes of Pan American Airways operating between Alameda, Calif., Manila, and Hong Kong stop regularly at Guam. A cable station on the island relays messages between San Francisco and the Philippines, China, and Japan.

History. A sharp controversy over the advisability of developing Guam as a United States naval base developed in Congress early in 1939 after President Roosevelt on January 12 had recommended a \$5,000,000 appropriation for improvement of the harbor works at Agana. This item was attacked in the Senate and House as a first step toward converting Guam into a first-class naval base. The move aroused an adverse reaction in Japan (q.v.) and in view of the strong opposition in Congress the Guam appropriation was dropped from the Naval Air and Submarine Base Bill. However provision for improvements to the Guam naval station was made in the Naval Public Works Act approved June 2, 1939.

GUATEMALA, gwä'tä-mä'lä. A republic in Central America. Capital, Guatemala City.

Area and Population. Area, 42,364 square miles; population, estimated at 3,044,490 on Dec. 31, 1938. Some 60 per cent of the population are Indians and the bulk of the remainder are mestizos. The small ruling class is largely of European origin. Populations of the chief cities with their suburbs in 1938 were: Guatemala City, 164,771; Quezaltenango, 30,125; Cobán, 26,774; Zacapa, 18,094.

Defense. Military service is compulsory. The

active army comprises about 6000 of all ranks, with a small air force.

Education and Religion. About four-fifths of the adult inhabitants are illiterate. The 1938 school enrollment was: Primary, 134,330; secondary, 5658; University of Guatemala, 694. In 1938 53,193 school children and 3157 adults were taught to read and write. Roman Catholicism is professed by the great majority.

Production. Coffee and bananas accounted for about 90 per cent of all exports in 1938. Coffee exports in 1938-39 were 54,000 metric tons; bananas in 1938, 9,376,593 stems. Banana shipments from the Pacific coast rose from 660,819 stems in 1934 to 3,551,924 stems in 1938. Corn, beans, wheat, sugar cane, and rice are the other chief crops. Livestock population in 1938: 532,257 cattle, 240,939 sheep, 162,743 swine, 95,215 horses, 38,736 mules and asses. The forests yield chicle and hardwood. Some gold is produced. The main industries are coffee-making, flour and sugar milling, and shoe, soap, and pottery making.

Foreign Trade. Imports in 1938 totaled \$16,761,388 (\$16,742,907 in 1937); exports, \$16,336,282 (\$16,108,609). The United States supplied 44.7 per cent of the 1938 imports, Germany 35.1, United Kingdom 5.9. Of the exports, the United States took 69.5 per cent, Germany 14.1.

Finance. For the fiscal year ended June 30, 1938, governmental receipts were 12,497,464 quetzales; expenditures, 10,979,063 quetzales. The public debt on Dec. 31, 1938, was 9,223,687 quetzales and 1,520,432 pounds sterling. The quetzal exchanged at one U.S. dollar in 1937 and 1938.

Transportation. Guatemala in 1939 had 737 miles of railways. On January 1 there were 3626 miles of roads and 792 miles under construction. Domestic air lines in 1938 carried 4991 passengers and 1,895,798 kilos of mail and freight; international lines in Guatemala, 5616 passengers and 105,433 kilos of mail, express, and baggage. The chief ports are San José and Champerico on the Pacific and Puerto Barrios and Livingston on the Atlantic.

Government. See 1938 YEAR BOOK, p. 309-310.

History. Gen. Jorge Ubico, Guatemala's dictator-President since 1931, maintained his firm grip on the reins of power during 1939 without encountering the armed opposition that flared up sporadically in preceding years. He proceeded to consolidate his absolute control and to put into effect measures of an economic and financial nature. A New Year's party and meeting of Guatemalan and Salvadorean newspapermen on the border between the two countries was broken up by President Ubico, apparently because a Salvadorean newspaper stated that a campaign for democracy in both countries would be discussed at the meeting.

In March Congress passed a law that virtually barred immigrants and foreigners from carrying on businesses in Guatemala. There had been much complaint from native business men against foreign competition. In May the President issued decrees barring all foreign political organizations and political activity by diplomats accredited to the government. The decrees affected particularly Nazi and Fascist organizations among the German and Italian colonies and the German and Italian diplomats and consular agents who had engaged in active propaganda among Guatemalans as well as among their own nationals.

In furtherance of Ubico's policy of co-operation

with the United States, an agreement for the dispatch of a U.S. military mission to Guatemala was signed in Washington on March 28. Early in April the Guatemalan normal schools were militarized. Instruction of the teachers was delegated to officers graduated from the Military College. Normal school graduates were to receive commissions as sub-lieutenants in the infantry reserve as well as teachers' certificates. On June 21-24 Ubico was host to President Somoza of Nicaragua, who was making a tour of the Central American capitals.

The government published a "white paper" reviving Guatemala's 80-year-old claim to British Honduras, which was seized upon by Nazis in Guatemala as a means of anti-British and anti-democratic propaganda. The Foreign Office at Guatemala City announced on August 23 that the dispute over British Honduras had not affected Guatemala's cordial relations with Britain. On September 4 President Ubico proclaimed Guatemala's strict neutrality in the European conflict. A conference of Treasury officials of the American republics was held in Guatemala City in November (see PAN AMERICAN UNION; PAN AMERICANISM).

Effective Feb. 18, 1939, a tax of from 5 to 12 per cent on the profits of commercial, banking, industrial, agricultural (corporate only), and public-service enterprises was imposed. It was announced on April 5 that the government had signed a contract with the International Match Company Realization Corporation, representing holders of the 1930 International Match loan, under which the unpaid principal and interest totaling 2,903,364 quetzales was cancelled in return for a cash payment of 900,000 quetzales. On April 27 President Ubico approved a decree cancelling on the ground of unconstitutionality the match monopoly given the Swedish Match Company in connection with the loan. An appropriation of \$100,000 was voted at the end of March for distribution among selected employees of the Ministry of Finance and Public Credit for their work in reorganizing the public finances. In August it was announced that the National Mortgage Bank had been authorized to issue \$300,000 of 20-year 3 per cent mortgage bonds to finance agricultural and other economic activities. The bonds were to be taken up by the Central Bank.

GUGGENHEIM, göög'ën-him, MURRY. An American capitalist and philanthropist, died in New York, Nov. 15, 1939. He was born in Philadelphia, Aug. 12, 1858, the son of Meyer Guggenheim, and received a public school education. In 1881 he joined with his father and brothers in organizing the firm of M. Guggenheim's Sons, and in 1901, when the smelting and refining branches of the business were merged with the American Smelting and Refining Co., he became a director and chairman of the finance committee and later headed the sales department. In 1916, the firm of M. Guggenheim's Sons became Guggenheim Brothers and Mr. Guggenheim continued active in this organization, being senior partner at the time of his death. Other organizations of which he was a director included the Yukon Gold Co., the Nevada Northern Railway Co., the Utah Copper Co., the Kennecott Copper Corporation, and Keno Hill, Ltd.

Generous to the city of New York, in 1919, with his brother Daniel, he gave the Central Display Greenhouses to the New York Botanical Garden in Bronx Park, and he assisted in defray-

ing the expenses of the Goldman Band concerts on the Mall in Central Park. In 1921 he shared with his brothers in contributing \$1,000,000 for the construction of the Barbara and Meyer Guggenheim pavilion at Mount Sinai Hospital. With his brother-in-law, Alfred Bernheim, he erected a dormitory at the University of Paris in 1929, for which the French Government made him an Officer of the Legion of Honor.

In 1929, Mr. Guggenheim, with his wife, established the Murry and Leonie Guggenheim Foundation to afford "charitable and benevolent assistance to the children of greater New York through the practical application of dentistry and oral hygiene to the children of New York City." The Foundation runs a free dental clinic and in 1932 established a School for Dental Hygienists. In his will, Mr. Guggenheim left \$5,000,000 to the Foundation.

GUIANA. See BRITISH GUIANA; FRENCH GUIANA AND ININI; SURINAM.

GYMNASTICS. See SPORTS.

GYPSY MOTH. See ENTOMOLOGY, ECONOMIC.

HADRAMAUT. See under ARABIA.

HAITI, hä'ti. A West Indian republic, occupying the western third of the island of Haiti or Hispaniola. Capital, Port-au-Prince.

Area and Population. Area, 10,204 square miles; population, estimated on Dec. 31, 1937, at 2,700,000 (1,631,000 at 1918 census). With the exception of some 3000 white foreigners and a few thousand mulattoes, the inhabitants are all Negroes. Estimated populations of the chief cities in 1936: Port-au-Prince, 105,000; Cap Haitien, 15,000; Aux Cayes, 15,000; Gonaives, 10,000; Saint Marc, 10,000; Jacmel, 10,000. French is the language of government and the educated class. The peasants, comprising more than 80 per cent of the population, speak a dialect known as Creole French.

Religion and Education. Most of the inhabitants profess the Roman Catholic faith. About 85 per cent of the people are illiterate. There are about 1060 primary schools, with 87,000 pupils; 21 secondary schools, with 6000 pupils; 68 farm and vocational schools, with 12,200 pupils; 2 normal schools; and colleges of medicine, law, applied science, and agriculture.

Defense. The armed constabulary, organized by U.S. officers during the American military intervention (1915-34) and since 1934 under Haitian command, comprises about 2500 officers and men. A United States military mission was contracted for by the Haitian Government in 1938 to reorganize the military school and act as technical advisers to the general staff of the Garde d'Haiti (constabulary).

Production. Agriculture supports the mass of the population. The country's prosperity is largely dependent upon export crops, chiefly coffee. For the fiscal year ended Sept. 30, 1939, the principal exports were: Coffee, 29,283,933 kilos (kilo equals 2.2 lb.) valued at 18,728,054 gourdes (gourde equals \$0.20); cacao, 1,805,357 kilos valued at 613,780 gourdes; cotton, 4,671,839 kilos valued at 4,416,524 gourdes; bananas, 2,029,767 stems valued at 2,820,679 gourdes; sisal, 7,492,062 kilos valued at 2,702,274 gourdes; raw sugar, 37,144,990 kilos valued at 4,878,536 gourdes; logwood, 6,919,200 kilos valued at 287,133 gourdes. Grapefruit, oranges, goatskins, lignum vitae, rum, honey, and corn are other exports. Manufacturing is confined to sugar refining, rum distilling, and the

preparation of tobacco products, vegetable lard, and canned fruit.

Foreign Trade. Imports during the 1938-39 fiscal year totaled 40,904,000 gourdes (37,974,000 in 1937-38); exports, 36,338,000 gourdes (34,732,000). The United States furnished 62.96 per cent of Haiti's 1938-39 imports (55.09 per cent in 1937-38); British Commonwealth, 13.78 (19.01); Germany, 5.65 (6.43). Of the 1938-39 exports, 34.73 per cent went to the United States (43.11 in 1937-38), 21.03 to France, 19.72 to the British Commonwealth, and 10.29 to Belgium.

Finance. For the fiscal year 1938-39 revenue receipts were 31,145,584 gourdes and loans for public works 8,321,161 gourdes. Total receipts were 39,466,745 gourdes and expenditures 36,768,818 gourdes. The 1939-40 budget estimates balanced at 29,189,000 gourdes. The gross public debt on Sept. 30, 1939, was 52,137,000 gourdes (43,950,000 on Sept. 30, 1938).

Transportation. Railways in 1939 extended 158 miles; highways, 1418 miles. Port-au-Prince has a connection with the Pan American Airways Caribbean network. During 1937-38, 655 steam and motor ships of 1,518,449 net tons entered the ports. For public works in 1939, see *History*.

Government. For the Constitution of June 17, 1935, see 1938 YEAR BOOK, p. 311. President in 1939, Stenio Vincent, who was elected by the National Assembly on Nov. 18, 1930, and whose term of office was extended for five years from May 15, 1936, by a special clause in the 1935 Constitution. All members of the cabinet and parliament were personal followers of President Vincent and no organized opposition was permitted.

History. The year 1939 was relatively uneventful for Haiti. Economic and financial conditions showed some improvement over the depressed conditions of 1938. Continuance of the \$5,000,000 public works program started by the J. G. White Corporation in 1938 helped to stimulate business activity and steady progress was made in improving and extending roads, trails, irrigation works, water and sanitary systems, etc. Government finances were aided by the payment of \$275,000 to Haiti by the Dominican Government on Feb. 17, 1939, in a compromise settlement of the indemnity awarded Haiti for the killing of some thousands of Haitian peasants in the Dominican Republic in 1937 (see DOMINICAN REPUBLIC under *History*). A conference between President Vincent and ex-President Trujillo of the Dominican Republic in March was reported to have strengthened friendly relations between the two governments. But doubt was cast upon the sincerity of Trujillo's professions of friendship toward Haiti when in October he permitted Col. Demosthenes P. Calixte and other Haitian exiles, previously living in New York City, to establish headquarters in the Dominican capital for the purpose of furthering revolutionary activities in Haiti. Colonel Calixte was dismissed as commandant of the Haitian constabulary by President Vincent in January, 1938, because of his alleged Presidential ambitions.

Although President Vincent during 1939 announced that he would retire as Chief Executive upon the expiration of his second term of office on May 15, 1941, the extensive amendments to the Constitution of 1935 proclaimed by the National Assembly on Aug. 8, 1939, indicated that he and his political associates intended to maintain their dictatorial control over the government and coun-

try. These 20 amendments were overwhelmingly approved by the voters (restricted to literate property owners) in a government-controlled referendum on July 23, 1939.

Election of the President was vested in the National Assembly and a two-thirds vote of that body was required, as against the simple majority of the popular vote necessary under the 1935 Constitution. Likewise the power of amending or revising the Constitution was transferred from the electorate to the National Assembly. President Vincent's future was taken care of by an amendment providing that former Presidents completing their terms after Nov. 10, 1930, shall be life members of the Senate, with full rights, and shall receive from the Public Treasury a monthly stipend of one-fourth the monthly salary of the President. Decrees issued by the Permanent Committee of the National Assembly while that body was not in session were given the full force of law by another amendment. For further details of Constitution, see *Bulletin of the Pan American Union*, January, 1940, p. 53.

To ease the strain on Haiti's finances, the United States Government in a Supplementary Executive Agreement signed July 8, 1939, agreed to a further modification in the financial convention of Aug. 7, 1933. For the year beginning October 1 Haiti was authorized to make a minimum payment covering only the interest and \$20,000 toward amortization of the outstanding dollar loans. President Vincent and several of his cabinet officers paid an informal visit to Washington during December 11-15 to seek additional financial aid. (The closing of European markets to Haitian exports by the European War threatened to have adverse economic and political repercussions.) A tentative agreement was reported to have been reached for the extension of a small loan by the Export-Import Bank for the construction of two tourist hotels, at Port-au-Prince and Cap-Haitien, respectively, in order to stimulate the tourist trade.

The law of 1935 restricting retail trade in many basic commodities to native-born Haitians whose fathers were also native-born was changed in January. Native-born Haitians, regardless of the origin of their fathers, were authorized to sell retail articles specified in the law. In an effort to eliminate street beggars, special taxes were levied to establish homes for aged and infirm persons unable to provide for themselves, and to maintain establishments for the care and education of abandoned or delinquent minors.

The European war caused an increase in prices of both imported and exported commodities. The partial disruption of the regular European markets and sources of supply caused a shift in Haitian trade to the United States. The government took steps to prevent excessive exportation of sugar and other products. A law of September 12 gave the Executive power to issue decrees with the force of law to protect the consuming public against undue price rises and shortages. The government proclaimed its neutrality on September 16. Early that month it revoked licenses granted to persons maintaining and operating radio, radio-telegraph, and radio-telephone stations, apparently to prevent violations of Haitian neutrality.

HAMBURG. See GERMANY.

"HAM AND EGGS." See CALIFORNIA; OLD-AGE PENSIONS

HAMILTON COLLEGE. A nonsectarian institution for the higher education of men in Clinton, N. Y., founded in 1812. A total of 450

students was registered for the 1939 autumn session. There were 46 members of the faculty for the year 1939-40. The productive funds of the college were approximately \$4,547,000 and the income for the year 1938-39 was \$378,709. The library contained 185,000 volumes. A new gymnasium and swimming pool will be completed in the spring of 1940. President, W. H. Cowley, Ph.D.

HAMMOND, JOHN STEVENS. An American sportsman, died in New York, Dec. 9, 1939. Born in Crown Point, N. Y., Dec. 5, 1880, he was graduated from the U.S. Military Academy, where he was a famous athlete, in 1905. He saw service in Cuba in 1907 and during 1910-12 served as a military attaché in various South American countries, his last post being in the Argentine. There he met Tex Rickard and left the army to join him in various oil and cattle deals. With the entrance of the United States into the World War, Hammond re-entered the army. Known for his book, *Gunner's Handbook of Field Artillery*, he was assigned to Plattsburg, N. Y., as senior instructor of field artillery and later commanded the firing center at Camp McClellan, Ala. He retired from the army in 1919 with the rank of colonel, and returned to South America, where he engaged in various enterprises.

Returning to New York in 1922, he joined with Tex Rickard in plans for a new Madison Square Garden. He handled most of the financing of the Madison Square Garden Corporation which built the \$7,000,000 sports arena, located in New York City at Eighth Avenue and 49-50th Streets. He was made vice-president in charge of new ventures and was instrumental in bringing professional hockey to the City. He purchased the franchise of the New York American team and was for a short time president of the club. In the spring of 1926 he purchased a second franchise for New York and the New York Rangers Club came into being. Hockey proved to be one of the biggest drawing cards of the Garden's long array of sports and became one of the major sports in the United States. In 1929, Colonel Hammond succeeded Tex Rickard as acting general manager of the Corporation. He resigned in 1932 and also quit the presidency of the New York Rangers Hockey Club, the Garden team. In 1934 he obtained control of the board of directors and served as its chairman, but a year later he resigned.

HAMPTON INSTITUTE. An institution founded in 1868 at Hampton, Va., for the education of Negroes. The enrollment for the autumn term of 1939 was 601 men, 386 women; total 987, while that for the summer school was 70 men, 386 women; total 456. The faculty numbered 113. The endowment for the fiscal year ending June 30, 1939 was \$10,328,576 from which the income was \$402,148. Gifts to the endowment and investment funds amounted to \$132,173. There were 64,733 volumes in the library. President, Arthur Howe.

HANDBALL. See SPORTS.

HARBORS. See PORTS AND HARBORS.

HARVARD UNIVERSITY. A nonsectarian institution of higher education for men in Cambridge, Mass., founded in 1636. The number of students enrolled for the year 1939-40 was 8379. Of the 3574 registered in the college 753 were seniors, 807 juniors, 938 sophomores, 1000 freshmen, and 76 out of course. Those in the graduate schools were distributed as follows: Arts and sciences, 1082; business administration, 929; and

education, 194. The professional schools reported the following registrations: Public administration, 14; engineering, 155; divinity, 71; law, 1390; medicine, 522; dentistry, 159; public health, 85; and design, 95. For the summer session of 1939 the registration was 2003. The officers of instruction and administration for 1939-40 numbered 1984, of whom 306 were professors, 97 associate professors, 142 assistant professors, and 21 clinical professors. Endowment funds of the University in June, 1939, exclusive of land and buildings used for educational purposes, had a book value of \$140,185,769. Total expenses of the year for instruction, research, and administration were \$10,959,902. Gifts for the year ending June, 1939, totaled \$4,128,686. The library contained 4,079,541 volumes and pamphlets. President, James Bryant Conant, Ph.D., LL.D., D.C.L. See ARCHAEOLOGY.

HATAY, REPUBLIC OF. See SYRIA AND LEBANON; TURKEY under *History*.

HATCH BILL. See POLITICAL ACTIVITY, RESTRICTION OF.

HAVERFORD COLLEGE. An institution of higher education, under the control of the Society of Friends, in Haverford, Pa., founded in 1833. Enrollment for 1939-40 totalled 326, including 12 graduate students. There were 44 members on the faculty. The total endowment as of Aug. 31, 1939, was \$4,437,498. The library reported 140,000 volumes. President, William Wistar Comfort, Ph.D., LL.D., Litt.D.

HAWAII (TERRITORY OF). A territory of the United States, comprising the Hawaiian Islands, in the Pacific Ocean, about 2800 miles west-southwest of San Francisco. Capital, Honolulu.

Area and Population. The islands forming the Territory have a combined area of 6407 square miles. Their population as reported by the Governor, for June 30, 1939, numbered 414,991. It exceeded by about 12½ per cent that of the census of 1930, which totaled 368,336. It also exceeded the total of 411,485, reported for June 30, 1938. The diverse racial origins of the inhabitants had an important bearing on the government of the Territory. The leading group, that of Japanese origin totaled 155,042 (1939), or 37.36 per cent of all; the group of Hawaiian or partly Hawaiian race, 63,858, or 15.39 per cent; the Caucasians (including nearly 40,000 Portuguese, Puerto Ricans, and Spanish), totaled 107,381, or 25.88 per cent. These three groups all increased in the course of the year: the Hawaiian-race group, by 1723, Japanese by 1503, and Caucasians by 382. Of other groups, Filipinos numbered 52,430 (1939), came to 12.63 of the total, and were on the decrease; Chinese 28,601, or 6.89 per cent, gained moderately in number; Koreans, 6738, were 1.62 per cent of the population; all other inhabitants numbered 941. The year's birth, 9033, surpassed the 3214 deaths by 5819; the excess of this gain over the gain of 3506 in population indicated a loss by net departures, etc., of 2313. The number of American citizens rose during the year, by 6472, to 334,657 (1939), or four-fifths of the whole. About five out of nine of the 80,334 non-citizens were Filipinos, consequently American nationals; the remainder were chiefly natives of the Orient, of relatively advanced age. The people of Hawaiian race were all citizens. The island of Oahu had (1939) 228,586 inhabitants; its chief city, Honolulu, capital of the Territory, had 154,476.

Education. Enrollments of pupils in public schools in the year ended June 30, 1939, numbered 91,099; those in private schools (December, 1938),

17,430. Expenditures of the year for public schools, \$7,449,534, included \$5,734,974 for teachers' salaries. Public schools numbered 187; private, 110. The extension of high-school education was going on, perhaps causing a greater relative change than in most other parts of the United States, since within less than a generation earlier it had extended to none but those whom the Governor's report styled "the selected few." The University of Hawaii had, in the academic year 1938-39, 1997 regular students, or 21 per cent more than the year before; it had also 1588 part-time students and 1488 enrolled in the summer session. It granted 313 bachelor degrees, 75 fifth-year certificates in education, and 33 master degrees. The University's expenditures for the year, \$1,079,187, were met mainly by Territorial appropriations (44.4 per cent) and Federal aid (24.4); partly, by fees from students (25.7).

Production. Goods produced in the Territory have in most cases a vegetable or an animal origin. They fall into two classes—those for domestic use and those for the exterior market, mainly the United States. Normally, goods of the latter sort cover the cost of the imports. Production for domestic use included the cultivation of many articles of diet, such as the taro plant; fisheries continued to provide an important part of the food; the government planted both the native oyster and the Japanese oyster in parts of the coast in 1939. The 25-year-old quarantine against the Mediterranean fruit fly was modified in November; and tests about this time indicated that papaya fruit of the proper grade, rightly handled, might be put through the required sterilization by heat and reach the U.S. mainland without spoiling; this raised hope that one of the products previously limited to domestic use might be added to the list of exportations.

Cane sugar and preparations of the pineapple account for over nine-tenths of the value of exports. The crop of sugar cane that was converted into sugar in 1939 apparently exceeded in quantity those of 1938 and of 1937; it yielded shipments estimated at 966,000 short tons of raw sugar, of which the value approximated \$57,700,000. The growers got an additional \$9,000,000, more or less, from a U.S. subsidy for compliance with the Federal sugar act. Nevertheless they complained that mounting costs in 1939 devoured any apparent gain over the unprofitable results of 1938. The growers and canners of pineapples reported in 1939 a good crop in quantity and quality and greater shipments of canned fruit and juice. The Honolulu Chamber of Commerce estimated the total of wages paid in the Territory in 1939 as \$118,000,000.

Oversea Trade. Hawaii shipped to the United States, in 1939, exports to the total value of \$113,206,898, as against \$96,556,679 for 1938. The imports, into Hawaii, of goods from the United States, totaled \$101,817,230 for 1939 and \$101,227,151 for 1938. Of Hawaii's exports (1939) sugar made \$55,217,960; canned pineapples, \$34,098,779; pineapple juice, \$16,723,754.

Finance. The general fund of the Territorial government reported, for the fiscal year 1938-39, receipts totaling \$14,468,992, payments amounting to \$14,631,310, and a closing balance of \$2,415,008. The chief part of the year's receipts was \$10,961,532 from taxes, special assessments and charges, etc. The main item of expenditure was \$6,656,647 for education. The Territory owed (June 30, 1939) \$39,046,000 on bonds outstanding,

or \$2,879,000 more than a year earlier; the bonds, to the extent of somewhat less than one-half, were for the requirements of Honolulu and of divers counties. Deposits in the seven banks totaled (June 30) \$111,361,392.

Transportation. The Territory had 2095 miles of highways in 1939. American, Canadian, and Japanese lines of steamships call at Honolulu and give connections with North and South American ports, Australia, and ports of the Orient. The Matson Navigation Company operates regularly between the Islands and the United States. The Inter-Island Steam Navigation Company carries passengers and freight from island to island. Airplanes of the Pan American Airways touch at Honolulu on weekly flights between the United States and the Orient. Inter-Island Airways, Ltd., operates a service of amphibian airplanes among the islands. Automobiles registered in 1939 numbered 66,485. Of 333 miles of railroad in the islands, 168 were on the island of Oahu.

Government. The Governor of the Territory of Hawaii (in 1939 Joseph B. Poindexter) is appointed by the President of the United States, for a term of four years. A bicameral Legislature (15 Senators and 30 Representatives), elected by the registered voters of the Territory (Senators quadrennially, Representatives biennially), votes appropriations and other Territorial acts. The Territory elects by popular vote a Delegate to the U.S. Congress (in 1939 Samuel W. King).

History. The U.S. Government's policy of rapidly strengthening defenses in the Pacific Ocean went into effect in the Hawaiian Islands. Waters near Pearl Harbor were forbidden, May 31, to vessels, unless holding special authorization. Fishing vessels were seized in November for disregard of this order; one of them was owned by a resident of Japanese race. The Navy Board, recommending to Congress, January 3, plans for 25 bases for aviation, included Ford Island in Pearl Harbor, Kaneohe Bay (also on Oahu Island), and the Palmyra Islands, midway between the Hawaiian Islands and Samoa. Formal claim to the Palmyras was made in December, on the ground that the United States had acquired them in the annexation of the Hawaiian Islands, and action was started in the U.S. District Court at Honolulu to obtain title from eight private claimants.

Contracts were let in August for some of the work to be done at Pearl Harbor, Kaneohe Bay, and the Palmyras, the first work ordered under the Navy's new plan for aeronautical bases. The aircraft carrier *Enterprise* and a force of cruisers and destroyers were ordered to the Hawaiian area in October for training in handling aircraft in those waters. The U.S. Army announced, December 12, a plan to increase its force in the Territory by 3000, mostly in the Air Force, to 25,000 men, in the course of 1940. The Government, December 4, contracted for the preparations of a floating drydock, 525 feet long, for towing from New Orleans to the Panama Canal, where it was to be taken partly to pieces, put through the canal, re-assembled, and towed to Pearl Harbor. Japanese warships were prohibited, November 17, from carrying cargoes of any sort from Hawaii to Japan.

Governor Poindexter, on a visit to the United States in August, expressed the Islands' concern lest interests in the States should effect a reduction of the Territory's quota of yearly exportation of sugar to the mainland. He pointed out that Hawaiian trade with the continental United States gave it the fifth place among the latter's external

customers, and that the Islands could not continue buying unless they could sell also. A bill was introduced in Congress, to aid Hawaiian legislative reapportionment.

HAY. The hay crop in 1939 of 84,526,000 tons which included 75,726,000 tons of tame hay and 8,800,000 of wild hay, about 7.5 per cent less than the 91,531,000 tons harvested in 1938 and compared with the 1928-37 average of 78,180,000 tons. The 69,245,000 acres harvested averaged 1.22 tons per acre and the 68,751,000 acres harvested in 1938 (1.33 tons per acre) compared with the 10-year average (1.16 tons per acre) of 67,671,000 tons. The carry-over of 16,000,000 tons from previous years provided a total supply 13,000,000 tons larger than the 10-year average and only 3,000,000 tons below the 104,000,000 ton supply for the 1938-39 season. Leading States in production of tame hay were Wisconsin 5,829,000 tons, Iowa 4,814,000, Minnesota 4,773,000, and New York, Illinois, and California each with around 4,180,000 tons; and of wild hay Minnesota 1,357,000 tons, Nebraska 1,316,000, North Dakota 962,000, and South Dakota 900,000 tons.

Important kinds of tame hay produced and the States ranking highest in each class included alfalfa 27,035,000 tons from 13,494,000 acres, California 3,229,000 tons; clover and timothy 23,640,000 tons from 20,828,000 acres, New York 3,152,000 tons; lespedeza 3,860,000 tons from 3,692,000 acres, Tennessee 919,000 tons—phenomenal expansion continued in southern parts of the Corn Belt and northern parts of the Cotton Belt; soybeans 6,263,000 tons from 4,423,000 acres, Illinois 1,241,000 tons; sweetclover 1,030,000 tons from 912,000 acres, North Dakota 326,000 tons; cowpeas 1,720,000 tons from 1,919,000 acres, Texas 538,000 tons; peanuts 878,000 tons from 1,924,000 acres, Georgia 206,000 tons; small grains cut for hay 3,828,000 tons from 3,800,000 acres, California 705,000 tons; sweet sorghum (sorgo) for forage and hay 8,666,000 tons from 5,875,000 acres, Kansas 2,040,000 tons; and other hay crops 7,472,000 tons from 7,355,000 acres, Minnesota 651,000 tons. Seed of important hay crops included alfalfa seed 1,357,900 bu., red clover 1,713,700, alsike clover 304,300, sweetclover 1,351,600, timothy 1,412,800 bu., and lespedeza 138,975,000 lb. The large area of 3,972,000 acres for seed resulted from large supplies of hay, the agricultural program, increased use of combines for seed harvest, and dry conditions favoring seed production rather than hay.

The season average price per ton received by farmers for all hay was \$7.59 and the estimated value of production was \$641,651,000 in 1939 compared to \$6.82 and \$623,854,000 in 1938.

HENRY M. STEECE.

HAYASHI, hä'yä-shē, BARON GONSUKE. A Japanese diplomat, died in Tokyo, June 27, 1939. Born in Aizu in March, 1861, he was educated at the Tokyo Imperial University, graduating from the Law College in 1887, when he entered the diplomatic service. After service in China, he was assigned to the London Embassy in 1893, where he remained until 1898 when transferred to Peking. Subsequently, he was made director of the bureau of commercial affairs at the Foreign Office, and in 1899 was appointed envoy extraordinary and minister plenipotentiary at Seoul, Korea.

In 1906, Hayashi was given that post at Peking,

and two years later he was sent to Rome. He returned to Peking in 1916 with the additional title of ambassador extraordinary and plenipotentiary. During 1919-20 he was governor-general of Kwantung Territory, and then was named Japanese ambassador extraordinary and plenipotentiary to the Court of St. James's. He retired from the diplomatic service in 1925. During his sojourn in England he attended the Economic Conference at Genoa and the Allied Conference on war debts and reparations in London in 1922 and the Inter-allied London Conference in 1924 as a representative of his government.

Hayashi was created a baron in 1907 and a privy councillor in 1934. After his retirement from the diplomatic service he was appointed grand master of ceremonies at the Imperial Court.

HEADLIGHTS, SEAL BEAM. See AUTOMOBILES; GLASS.

HEALTH PROGRAM, NATIONAL. See MEDICINE AND SURGERY.

HEATING AND VENTILATING. Formerly business conditions in the heating, ventilating, and air conditioning industries were closely related to the volume of new building construction. In recent years, however, so much of the total activity has been in modernizing or repairing existing buildings that the former close relationship has been upset. There is now no one general index which can be relied upon and consequently it is necessary to consider important components separately.

In building heating, *Heating & Ventilating's* "Index of Heating Business Activity" is perhaps the best single indicator. This index is based on 1929 = 100. During the early part of 1938 it was substantially steady at slightly over 60, rising to 70 just as the year closed, establishing an average for the year at about 63. Early in 1939 it rose to 88, and then fell to give an average for the year of about 80. At the year-end the index was again pointing upward. Based on this index the heating business was about 25 per cent greater in dollar volume in 1939 than in 1938 and about the same as during 1931, 1936, and 1937.

The increased volume was by no means uniformly distributed over the field. Sale of oil burners, following a very disappointing year in 1938, rose by 50 per cent in number until the 175,000 reported sold during the year was about the same as during the former record years of 1936 and 1937. On the other hand, automatic coal-fired stokers reported disappointing results compared to 1938, for the number reported sold fell by nearly 10 per cent. Sale of gas-burning equipment rose well over that reported for 1938. By the end of 1939 it was reported that the number of houses heated centrally by oil burners was close to 2,000,000, by automatic coal stokers close to 450,000, and by gas-burning equipment close to 800,000.

In the cooling of buildings, which is the phase frequently, although probably loosely, referred to as air conditioning, there is no clear-cut single index of business activity. This phase is relatively new; methods and practices are undergoing constant change, and there is so much confusion in thought and nomenclature that attempts to develop activity indexes are premature.

In the absence of a single index of activity, perhaps the best procedure is to compare the changes in electric load due to air cooling as reported by the electric utility companies. On this basis it is estimated that the dollar volume of

cooling business was substantially the same as, or slightly less than, during 1938. This represents a drop of 35 to 40 per cent from the volume reported in 1937 which was the banner year for this activity.

Dollar volume of business done in connection with cooling has always been but a small fraction of that done in building heating. During the period from 1932 to 1937 this relative volume increased each year. During 1938 and 1939 however it has decreased, and for 1939 it represented about 10 per cent of the total.

Due to an absence of a single statistics-gathering organization there has always been some question as to how extensive the use of air cooling has become. During the year, statistics were gathered by Edison Electric Institute from 141 electric utilities showing the estimated horsepower of air-conditioning load attached to their systems. As these utility companies furnish power to a large part of the installations, publication of these figures was revealing. According to this report there were over 770,000 h.p. of this type of load early in 1939. The author estimates that, allowing for additions during 1939 and for loads not reported, at the close of 1939 there was about 1,000,000 h.p. of electric motor capacity in buildings in the United States furnishing motive power to air cooling equipment.

This same report also permitted the first firm estimate of the kinds of buildings into which this cooling equipment has been placed. The principal classifications and the per cent of the total horsepower in each are presented in the accompanying table.

PERCENTAGES OF THE TOTAL AIR-COOLING LOAD INSTALLED IN VARIOUS TYPES OF BUILDINGS

[Based on reports to early 1939]

Stores and Store Buildings	24.0
Theaters	20.0
Offices and Office Buildings	17.5
Restaurants, Hotels and Recreational	14.5
Factory and Industrial Buildings	12.0
Public Buildings	6.3
Banks	2.5
Residences and Apartments	2.0
Hospitals	0.6
Broadcasting Systems	0.6
Total	100.0

This tabulation also indicates what exceedingly small progress has been made up to the end of 1939 in getting acceptance of the idea of applying mechanical cooling to buildings where there is no profit motive in the installation. Of the several building types listed in the table only residences, apartments, public buildings, and hospitals can be considered as non-commercial, and most apartment buildings and some hospitals are erected with a distinctly commercial motive. Granting, however, that all such buildings are cooled for purely personal comfort, they add up to only 9 per cent of the total. Consequently it can be seen that over 90 per cent of all cooling in buildings has been done because of the hope of profit or commercial advantage of some kind. It is evident that those who believe that purely personal-comfort motives will eventually account for the common use of air cooling in buildings still are a long way from having their beliefs realized.

An important development in connection with cooling practice was the rise in importance of the self-contained cooling unit, wherein mechanical cooling equipment is built into a metal enclosure

suitable for placing in the room to be cooled or adjacent to it. These units, formerly on the market in capacities of only 1 to 5 tons of refrigeration (200 to 1000 B.t.u. per min.) were developed until they are available in sizes of 15 to 20 tons. Since they are shipped fully charged with refrigerant and with refrigeration piping complete they eliminate much of the field erection problem formerly encountered. To add to their attractiveness they are portable and can thus be put into rented space, such as chain stores. Moreover there has been a steady trend downward in the capacity of the average installation of air cooling equipment until a great many of these can be served by a unit of no greater capacity than 20 tons.

Notable during 1939 was the letting of a contract to cool the entire office quarters of the Social Security Board, which required a cooling plant of over 4000 tons of refrigeration and which is believed to be the largest single installation ever put into one building. Of interest too was the offering on the market of a factory-installed, standard accessory for cooling and heating passenger automobiles. It was offered late in the year at the time of the introduction of 1940 models and no record of the public acceptance or performance is available as yet. Little progress was made during the year in securing adoption of cooling for passenger buses. It is reported that about 400 cooled buses are in operation on regular runs mostly in the Southwest and West. About 650 railroad passenger cars were cooled during 1939, bringing the total of such cars to about 12,000. See AIR CONDITIONING.

Hazards to the health of workmen in factories arising out of the presence of injurious foreign substances in the air drew much attention during 1939. Enactment of Workmen's Occupational Diseases Acts in a number of States in recent years has greatly stimulated interest in these problems. During 1939 a committee of American Standards Association presented preliminary drafts of codes intended to establish the allowable concentration in air of a few of the more injurious gases and vapors, including carbon monoxide, carbon bisulphide, and benzene. This is preparatory to similar drafts covering other substances, and also preparatory to anticipated efforts to get the whole subject systematized.

C. H. B. HOTCHKISS.

HEILUNGKIANG. See CHINA under *Area and Population*.

HEJAZ. See ARABIA under *Saudi Arabia*.

HEREDITY. See ZOOLOGY.

HESSE. See GERMANY.

HIGHWAYS. See BRIDGES; ROADS AND STREETS.

HINES, JAMES J. See NEW YORK CITY.

HISPANIC SOCIETY OF AMERICA, THE (Spanish Museum and Library). Founded in 1904. An educational institution, containing objects of artistic, historic, and literary interest, its purposes are to advance the knowledge of the Spanish and Portuguese languages, literature, and history and to encourage the study of the countries wherein Spanish and Portuguese are or have been spoken languages. In furtherance of these aims, paintings and other art objects together with manuscripts, maps, and a library of about 40,000 books were placed in charge of the Society. These varied collections have been gradually increased so that, for example, the library now forms one of the most notable Hispanic libraries in America. A

number of temporary exhibitions have been held of the works of noted Hispanic artists. The Society has issued more than 600 imprints relating to Spanish art, history, and literature. In this group are the Huntington reprints of early books, monographs, catalogs on the collections, a Handbook of the museum and library collections (1938), and several works published in co-operation with other institutions. Membership in the Society is honorary and is limited chiefly to Hispanists of distinction. President, Archer M. Huntington. Headquarters: Broadway, between 155th and 156th Streets, New York City.

HISPANIOLA. Official name of the island commonly known as Haiti. See HAITI; DOMINICAN REPUBLIC.

HISTORY. See FRENCH LITERATURE; GERMAN LITERATURE; LITERATURE, ENGLISH AND AMERICAN; ETC.; also, sections on *History* under each country.

HOBART COLLEGE. An institution for the higher education of men in Geneva, N. Y., founded in 1822. William Smith College, a co-ordinate institution for separate instruction of women, was established in 1908. Undergraduate work at both colleges leads to A.B. or B.S. degrees, with advanced work leading toward Master's degree in some departments. The student enrollment at Hobart for autumn of 1939 was 364, and for William Smith was 194. The combined faculty totaled 54 members. Library contained 105,000 volumes. Endowment was \$1,353,217; value of grounds and building \$1,017,978; income for the year approximately \$390,734; gifts received in 1938-39 college year \$36,506. President, William Alfred Eddy, A.B., A.M., Ph.D., LL.D., L.H.D.

HOCKEY. See SPORTS.

HOGS. See LIVESTOCK.

HOLLINS COLLEGE. A liberal arts college for women, founded 1842, located six miles north of Roanoke, Va. It is nonstate, nonsectarian, with an endowment of \$444,819. The 1939 enrollment was 326. The faculty numbered 39, excluding all administrative officers. There were 11 academic buildings, exclusive of faculty residence halls and residences on a campus which included more than 400 acres. The library contained 30,592 volumes. The physical equipment was valued at \$1,468,523 in 1939. President, Bessie Carter Randolph, Ph.D.

HOLY CROSS COLLEGE. A Roman Catholic college for men, under the Society of Jesus, in Worcester, Mass., founded in 1843. The enrollment for the autumn of 1939 totaled 1269. The faculty numbered 84. The library contained 123,153 volumes. President, The Very Rev. Joseph R. N. Maxwell, S. J., inducted Nov. 26, 1939.

HOME OWNERS' LOAN CORPORATION (HOLC). See FEDERAL HOME LOAN BANK BOARD.

HOMESTEAD PROJECTS. See FARM SECURITY ADMINISTRATION.

HOMICIDES. See VITAL STATISTICS; FEDERAL BUREAU OF INVESTIGATION; PRISONS.

HONAN. See CHINA under *Area and Population*.

HONDURAS, hõn-doo'ra's. A Central American republic. Capital, Tegucigalpa.

Area and Population. Area, about 46,250 square miles. Population, estimated at 1,014,738 on June 30, 1938 (854,154 in 1930). The people are mainly of mixed Spanish and Indian blood, except for a considerable Negro element in the

north coast banana region and some 35,000 aborigines. Populations of the chief cities (with suburban areas) in 1935 were: Tegucigalpa, 42,903; Comayagüela, 15,095; San Pedro Sula, 32,721; Tela, 14,460.

Defense. Every male citizen is liable to three months compulsory military service at the age of 21 and to service in the reserves from 23 to 40. The army in 1938 comprised about 2000 men and 19 airplanes. Defense budget for 1939-40, 2,082,000 lempiras.

Education and Religion. About 67 per cent of the inhabitants over seven years old were illiterate at the 1935 census. In 1937 there were 757 public elementary schools with 40,836 pupils, 16 secondary and 6 normal schools, and a National University with 298 students. Roman Catholicism is the prevailing religious faith.

Production. Agriculture and stock raising are the chief occupations. Bananas account for about 60 per cent of the value of all exports and minerals, chiefly gold and silver, for about 25 per cent. Banana production (8,458,803 stems in 1937-38) has been steadily declining due to the "Sigatoka" disease. Coconuts, coffee, leaf tobacco, corn, beans, and sugar cane are other crops. The forests yield mahogany and other hardwoods. There is little domestic manufacturing.

Foreign Trade. Effective July 31, 1937, the fiscal year was changed to end June 30. For the 11-months ended June 30, 1938, imports totaled \$9,467,874; exports, \$7,356,388. Banana exports were valued at \$4,225,801; gold and silver, \$1,921,594. The United States supplied 62 per cent of the 1937-38 imports and purchased 86.5 per cent of the exports. See IMPORTS AND EXPORTS.

Finance. Budget revenues and expenditures were estimated to balance at 11,451,000 lempiras in 1938-39 and at 11,026,000 in 1939-40.

The public debt on June 30, 1938, totaled 20,733,035 lempiras (internal, 14,809,160; external, 5,923,875). The official exchange rate of the lempira was \$0.50 in both 1937 and 1938.

Transportation. Honduras in 1939 had about 950 miles of railways and 511 miles of roads. The inadequacy of rail and highway transportation facilities enabled the TACA air system, with headquarters at Tegucigalpa, to develop into a very large freight carrying concern. It operates planes from Tegucigalpa to all parts of Honduras and to the principal centers in Nicaragua, El Salvador, and Guatemala. Tegucigalpa is a stopping point on the Pan American Airways international service.

Government. The Constitution of Apr. 15, 1936, extended the terms of office of the President, Vice President, and members of Congress from four to six years. It stipulated that the incumbent President and Vice President should continue in office until Jan. 1, 1943, and that the Constitutional Assembly of 59 members (all Nationalists) should automatically become the regular National Congress with the members holding office until Dec. 4, 1942. President in 1939, Gen. Tiburcio Carías Andino (Nationalist), who assumed office Feb. 1, 1933.

History. The major economic problem of Honduras is the drastic decline of banana production that resulted in 1936-37 in the reversal of the customary favorable trade balance. In 1929-30 exports exceeded imports by \$10,225,000; in 1937-38 imports topped exports by \$2,111,486. The campaign to check the banana plague was reported to be meeting with some success in

1939. But the government decided that a more ambitious economic reconstruction programme was in order. Early in February Congress approved a law sponsored by Dr. Julio Lozano, Secretary of Finance, Public Credit and Commerce, which authorized the President to engage a foreign technical mission to study the republic's economic condition, propose a revised taxation system, draft other economic and financial legislation, and prepare a general program for agricultural and industrial development.

The law also called for the employment of agricultural experts to train Honduran farmers and encouragement of immigration of farmers. Once the technical mission had completed its task, Congress was to authorize the President to contract a loan for use in promoting economic activity.

On June 22 the Honduran Government followed the precedent set by Guatemala in prohibiting political activities by diplomats, consular agents, and others in the service of foreign governments. The decree also barred publication of political pamphlets and documents and the wearing of uniforms or insignias of foreign political or ideological organizations. The decree was said to have been directed mainly at Nazi and Fascist propaganda activities.

Negotiations for a settlement of the Honduran-Nicaraguan boundary dispute were continued in 1939 by the Mediation Commission established in 1937 in San José, Costa Rica (see 1938 YEAR BOOK, p. 319). Publication in May of Nicaragua's new Constitution affirming Nicaragua's claim to the colonial boundary of 1821 added fuel to the dispute. But the amicable status of the controversy was indicated by the cordial reception accorded President Somoza of Nicaragua by President Carias Andino and his cabinet upon the former's visit to Tegucigalpa on June 29.

HONDURAS, BRITISH. See **BRITISH HONDURAS**.

HONG KONG. A British crown colony consisting of the island of Hong Kong (32 sq. mi.), Old Kowloon (3 sq. mi.), and the New Territories (356 sq. mi.) leased from China (June 8, 1898) for 99 years. Total area, 391 square miles; total population (1938) 1,010,000, of whom 98 per cent were Chinese. A large number of unrecorded refugees have entered the colony since the outbreak of Sino-Japanese hostilities. In 1938 there were 35,893 births and 38,818 deaths. The 1249 schools had a total enrollment for 1938 of 104,134; the Hong Kong University had 538 students enrolled.

Production and Trade. The main industries were the manufacture of sugar, cement, flashlights, rubber shoes, lard, and ships. Deep-sea fishing is carried on extensively. Trade (merchandise) in 1938: imports, HK\$618,169,000; exports, HK\$511,902,000 (Hong Kong dollar averaged \$0.3046 in 1938). Exports declined sharply in 1939 due to the Japanese capture of Canton and Kowloon and to trade restrictions on the China coast. Principal commodities of trade were foodstuffs, metals, piece goods, oils and fats, Chinese medicines, and fertilizers. Hong Kong, a free port, is the chief port for South China. Its harbor is fortified and is the headquarters for the China Squadron of the British Navy. A total of 67,007 vessels aggregating 30,962,756 tons, entered and cleared the colony during 1938.

Communications. There is an electric tramway of more than nine miles; a cable tramway

joining the Peak district with the lower levels of Victoria; and a government railway on the mainland joining Kowloon with Canton. After the Japanese occupation of Canton (Oct. 21, 1938), the government railway's receipts dropped from HK\$1,500,000 monthly to less than HK\$40,000. Highways extended 371 miles in 1938 (173 miles on the island of Hong Kong, 106 on Kowloon, and 92 in the New Territories). Five large air companies (Pan American Airways, Imperial Airways, Air France, China National Airways, and Eurasia Airways) used Kai Tak airport in Hong Kong as a terminus for their services.

Government. For 1938, revenue totaled HK\$36,735,854; expenditure, HK\$37,175,897; net public debt, HK\$11,760,000. The government announced (December, 1939) that Hong Kong would contribute annually HK\$6,000,000 to Great Britain's war chest, the donation to be raised chiefly by income taxes, the first of such taxes ever to be levied in Hong Kong. The colony is governed under Letters Patent of Feb. 14, 1917, and Royal Instructions of the same and following dates, by a governor who is assisted by an executive council of 6 official and 3 unofficial members. There is a legislative council, presided over by the governor, of 9 official and 8 unofficial members. Governor, Sir G. A. S. Northcote (appointed 1937).

History. The outbreak of the war in Europe was followed by dislocations in the economic life of Hong Kong, which had already been subjected to violent vicissitudes since the beginning of hostilities in China. In order to conserve British foreign exchange resources, dealings in Hong Kong in all currencies other than sterling and currencies linked to sterling were restricted by government order on Sept. 8, 1939. Ten factories engaged in the manufacture of electric torches were forced to curtail their output in September when the price of copper soared to prohibitive heights. It was estimated that more than 1000 Chinese men, women and children were thrown out of employment in this one industry alone.

Trade with China—negligible since the capture of Canton by the Japanese (Oct. 21, 1938)—was further reduced by Japan's intensified blockade of China's coast. The sudden removal of Germany from Far East trade lanes was felt particularly in Hong Kong, where German imports in 1938 amounted to HK\$39,039,104 (mostly chemicals, drugs, dyeing, and tanning materials). Exports to the Reich in 1938 totaled HK\$13,138,525.

Hong Kong military defenses were strengthened in 1939; additional naval units were assigned to the colony; the manufacture and distribution of gas masks were accelerated; and the colony experienced its first blackout on September 23. See **CHINA** under *History*.

HOOVER DAM. Same as **Boulder Dam**. See **DAMS**; **ELECTRICAL MACHINERY**; **RECLAMATION**, **BUREAU OF**.

HOPEI. See **CHINA** under *Area and Population* and *History*.

HORMONES. See **BIOLOGICAL CHEMISTRY**; **MEDICINE AND SURGERY**.

HORSES. See **LIVESTOCK**; **SPORTS** under *Turf*.

HORTICULTURE. Definitely on the upturn following the long continued economic depression, American horticulture, particularly that portion concerned with exportable fruits, such as the apple, pear, orange, and grapefruit, was suddenly confronted in the late Autumn with restricted exports in its most important outlets, the United Kingdom and France. On November 15, the Brit-

ish Board of Trade announced a complete prohibition, except under license, of imports of fresh apples and pears. The situation arose from the exigencies of the new World War, with ships and money needed badly for the transport and purchase of war supplies and staple foods. The French government announced that in view of the large apple crop in France, no imports of American apples would be needed before the middle or end of the first quarter of 1940. The seriousness of the situation is indicated in the fact that Europe in the 1938-39 season took 89 per cent and 84 per cent respectively of the American apple and pear exports. The United Kingdom was by far the most important consuming country.

To offset the foreign market collapse, certain of the exporting States, particularly Washington and Oregon, put on active campaigns to increase home consumption. The results were very helpful, and despite the larger commercial crop of apples in 1939 than in 1938, there was about the same amount of apples in cold storage on December 1 as the year before. As a result there was no disastrous slump in prices, although the season average price per bushel received by farmers was somewhat lower than in 1938. There was, on the other hand, no material difference in the total value of the commercial apple crop in the two years. The citrus industry suffered a disastrous year because of unprecedented production, particularly of grapefruit.

World Production. October estimates of the Canadian apple crop indicated a production of 15,623,000 bu.—a slight decrease from the 1938 final figure. A serious situation arose through the drastic limitations on exports to the United Kingdom—the total authorization being less than half the amount exported in each of the two preceding seasons. Australasian apple and pear production also faced a critical situation, with exports curtailed seriously by shortage of refrigerated ships.

The rapid expansion in the world citrus crop was reflected in the Egyptian area where yields attained an all time record of 729,000 boxes, more than double that of the preceding year. Spanish grape exports were still restricted due to the recent civil war, only 35 per cent of the pre-war period. The Mediterranean-basin almond crop was the smallest in ten years. The Italian lemon crop was light due to after effects of a heavy crop year in 1938 and unfavorable spring weather. The prospects for a large crop of winter vegetables in Cuba were good, with the tomato the dominant item.

Foreign Trade. Based on data released by the U.S. Department of Commerce there was a decline in value of both export and import horticultural products in 1939 as compared with 1938. The total value of export items for the first ten months of 1939 was \$85,528,992 as compared with \$90,274,270 for the corresponding period of 1938. The total value of import items was \$54,450,372 in 1939 and \$62,153,351 in 1938. Leading export items were oranges, boxed apples, pears, raisins, prunes, canned peaches, canned pears, and canned fruits for salad. Leading import items were bananas, tapioca, olives, cashew nuts, Brazil nuts, and tulip bulbs. The banana was again by far the most valuable single import item, totaling over 24 million dollars.

Undoubtedly the war was the primary factor leading to reduced foreign trade in horticultural commodities. There was some improvement in South American trade, with Argentina granting

unlimited importation on American apples up to Jan. 31, 1940, and Uruguay increasing the import quota on apples and pears.

Domestic Production. Fruit production in the United States was about 10 per cent greater in total than in 1938 and about 23 per cent above the 10-year average, 1928-37. Among crops showing an increase were apples, apricots, cranberries, cherries, peaches, plums, and strawberries. Fortunately domestic conditions, based on an increasing consumer buying power, were improved, and in addition the Federal Surplus Commodities Corporation purchased large quantities of various fruits for relief distribution. Despite somewhat lower unit prices, the total cash income to producers was slightly higher than in 1938.

In the vegetable field, the production of truck crops for canning in 1939 was somewhat less than in 1938. On the other hand the production of truck crops for fresh market was slightly larger.

Crop	1939	Unit	1938
Apples	100,284,000	Bu.	82,390,500
Peaches	61,730,000	"	51,945,000
Pears	30,910,000	"	32,473,000
Grapes	2,471,000	Tons	2,704,000
Cherries	185,000	"	141,000
Prunes (dried)	212,000	"	238,000
Oranges	78,264,000	Boxes	78,863,000
Grapefruit	36,600,000	"	43,714,000
Lemons	10,650,000	"	11,322,000
Cranberries	671,000	Bbl.	476,000
Pecans	61,628,000	Lb	49,721,000
Strawberries	13,624,000	Crates	11,361,000
Asparagus	6,887,000	"	6,099,000
Beans, Snap	16,580,000	Bu	15,107,000
Beets	2,021,000	"	1,996,000
Cabbage	989,200	Tons	1,296,000
Cantaloupes	14,402,000	Crates	14,973,000
Cauliflower	8,422,000	"	8,401,000
Celery	11,527,000	"	11,868,000
Lettuce	24,066,000	"	19,676,000
Onions	17,470,000	Sacks	15,038,000
Peas	9,627,000	Bu.	8,505,000
Spinach	13,430,000	"	12,556,000
Sweet corn	114,400,000	Ears	110,250,000
Tomatoes	24,585,000	Bu.	24,724,000

Research. With increased production no longer an objective, because of surplus crops, interest centered in the production of better quality crops and decreased costs of growing and handling. The development of improved varieties of fruits, flowers, and vegetables was continued actively by various research organizations. The Connecticut State Station distributed the Hebron and Shelton strawberries, products of its experiments. From the Texas Station came the Alamo, Ranger, and Riogrande strawberries, and from the North Carolina Station, working jointly with the U.S. Department of Agriculture, the Day-break, Eleanor Roosevelt, and Fairmore strawberries. Two new peaches, Fireglow and Pace-maker, were added by the New Jersey Station to its list of fine new varieties.

Further studies by several of the agricultural experiment stations on the effective placement of fertilizer opened the way to material savings to vegetable growers. More evidence was secured that various of the so-called trace elements, such as boron, manganese, and magnesium, may be deficient in certain soils to the extent of limiting production or damaging the crops. Great interest was displayed in the use of synthetic growth-promoting substances for inducing freer rooting of cuttings and sturdier growth of seedlings. The U.S. Department of Agriculture reported that certain of these growth substances when sprayed on apple trees two or three weeks before normal

harvest season, would prevent premature dropping, a serious fault in certain varieties, such as the well known McIntosh apple.

Ornamentals. No field of horticulture exceeded that of the ornamentals in expansion and nation-wide interest in 1939. This was well shown in the large number of new books on various aspects of home gardening and in the activities of the numerous horticultural societies and garden clubs. Great interest was shown in the growing of plants in water cultures, with several books appearing on the subject. That water culture is not altogether a passing fancy was indicated in the fact that several large commercial greenhouses were equipped to grow flowers in gravel or sand supplied with nutrient solutions.

J. W. WELLINGTON.

HOSPITALS. See ARCHITECTURE.

HOSPITAL SCHOOLS. See SCHOOLS, ELEMENTARY AND SECONDARY.

HOUSE OF REPRESENTATIVES. See CONGRESS, U.S.; UNITED STATES under *Legislation*.

HOUSING. Federal. The year 1939 was notable for the progress of public housing programs under Federal, State, and local authorities.

There are now functioning no less than eleven Federal agencies concerned with housing. These are:

In the Department of Agriculture: Farm Credit Administration (FCA), which as part of the agricultural co-operative credit system makes loans available for construction and improvement of farm houses; Farm Security Administration (FSA) which makes loans to certain classes of farmers and is completing rural community projects begun by the Resettlement Administration and other previously existing agencies.

Under the Federal Loan Agency: the Federal Home Loan Bank Board supervises four separate agencies operating in the field of home mortgage finance. Three of these deal only with home-financing institutions. The fourth, the Home Owners' Loan Corporation (HOLC), an emergency agency to lend to home-owners facing foreclosure, ceased lending operation in 1936, and is now servicing its loans and caring for acquired properties. The Federal Housing Administration (FHA) insures loans made by private institutions for residential building or improvement. Two other agencies purchase or refinance certain classes of mortgages.

Under the Federal Works Agency: the U.S. Housing Authority (USHA) makes loans and "grants-in-aid" to local housing authorities to develop low-rent housing and slum clearance projects. It exercises supervision to ensure (1) that projects will reach low-income families living under substandard conditions; (2) that an equivalent number of substandard dwellings will be demolished; (3) that at least 10 per cent of the development cost is raised from sources other than the Federal Government; (4) that the locality matches the annual Federal contribution on the basis of at least one to five; (5) that costs are within limitations of the United States Housing Act of 1937. Before a community can receive financial assistance from the USHA, it must:

- (4) Agree to make local annual contributions.
- (5) Guarantee that for all dwellings built with USHA funds an equal number of slum dwellings will be eliminated.
- (6) Observe strict economy in construction.
- (7) Guarantee the payment of prevailing wages.

There are 38 States in which communities can legally set up authorities empowered to borrow money from the USHA. All available USHA funds have been parceled out among 15 of these. At the end of the year there were 260 local housing authorities.

At the end of the year total USHA loan contracts were \$581,996,000 for 147 local housing authorities; 145 projects in 85 cities with an aggregate of 58,169 dwelling units were under construction in 23 States, the District of Columbia, the Territory of Hawaii, and Puerto Rico, with projects in Augusta, Ga.; Austin, Tex.; Buffalo, N. Y.; Charleston, S. C.; Jacksonville, Fla.; New York City, and Toledo, Ohio, already occupied.

Outstanding loans totaling \$581,776,000 representing 90 per cent of the \$646,569,000 total estimated cost of projects, had been approved for 155 communities; more than 17,000 persons migrated from substandard dwellings into USHA-aided projects during 1939, and 10,000 substandard structures had been eliminated in 26 cities; net construction cost of dwellings under construction is \$2831 per dwelling unit; shelter rents will average \$11.45 per dwelling per month in the South and \$15.80 in the North. The entire program calls for loans totaling \$693,000,000, which will defray 90 per cent of the \$770,000,000 cost of projects to rehouse approximately 160,000 low-income families of 166 communities now having either loan contracts or earmarking funds.

Construction and operating costs and rents in urban housing projects are reported becoming lower month by month. This proves, according to USHA officials, that (1) with USHA communities can clear slums and rehouse families formerly living in unfit and unsanitary buildings, (2) costs are lower than average private construction in every community, (3) rents in every community are as low as or lower than average rents paid for slum tenements and country tumble-down shacks.

Thirty housing authorities in cities and towns with populations of approximately 10,000 or less in 16 States, were organized to co-operate in the USHA rural low rent housing program started in 1939. The USHA-aided farm homes would include living, cooking and dining space, three bedrooms, storage space, and a work porch; average construction costs about \$1700 per dwelling. Rents would range from about \$4.00 to \$5.00 a month per house. Construction has begun on two projects. Four authorities have applied for USHA loans to finance a total of 800 farm homes and are ready to start construction. Five more are ready to submit applications for about 1000 dwelling units.

Under the FHA program 153,496 dwelling units were constructed in 1939, about 95 per cent being single-family houses with an average value of \$5000 or less; and 512,849 old properties were modernized. Home-financing insurance during 1939 amounted to \$954,000,000 as compared with \$693,500,000 in 1938, a 37.5 per cent increase. Loans on large-scale rental projects totaled \$51,436,625 as compared with \$47,493,150 in 1938.

New York State. New York is the only State with its own housing program in effect. At the State election in November 1938, a Constitutional

(1) Set up a local housing authority. This can be done only in States with housing enabling acts.

(2) Determine the extent of substandard housing conditions and the rents which families living in bad housing can afford to pay.

(3) Raise 10 per cent of the development cost.

amendment was adopted to enable the Legislature to act. The amendment authorized a total of \$300,000,000 in loans for housing projects and a million dollars a year in subsidies, total subsidies not to exceed \$5,000,000. The Desmond-Moffat-Mitchell bill, officially known as the State Public Housing Law, was passed by the Legislature in January and was signed by the Governor July 1. The law authorizes an appropriation of \$150,000,000 which the State may borrow on its own credit to be loaned to municipalities or their housing authorities to meet capital cost of low rent housing projects; \$1,000,000 was appropriated for yearly subsidies to insure the low rent character of such projects. Not more than one-third of loan and subsidy may be granted to municipalities outside of New York City and not more than two-thirds to New York City. Under the old State law providing for limited dividend housing projects—the bulk of which is retained—there was an unpaid State Board of Housing. The new law substitutes for the old Board a salaried Superintendent of Housing, who is Mr. Edward Winefeld. One application has been approved under the new law, by New York City, for a project in the congested Navy Yard district of Brooklyn to provide shelter for 3800 families at a cost of \$22,000,000. The New York law applies only to low income groups and the annual income of a tenant may not be more than five times the annual rental of an apartment except when there are three or more dependents when the income may be six times the rent. Each project must be part of a definite plan for replacing a blighted area. Loans are made at the going rate of interest plus the cost of marketing the bonds and must be amortized in fifty years. They may be made up to 100 per cent of the cost. The municipalities must guarantee interest and amortization payments. Subsidies are at the going rate of interest plus 1 per cent and must be matched by the municipality. There is no tax exemption on the original value of the property and the municipality retains the original tax income. State projects must be kept independent of Federal projects.

New York City. The most notable local housing developments have been in New York City. The New York City Housing Authority was the first local housing authority and the first to work with the USHA under the Federal Housing Act of 1937. It is undertaking the largest slum-clearance and housing projects in the country, expected to provide 12,711 apartments for 45,786 persons at a cost of \$72,830,797.67, of which \$46,146,641.67 had been spent up to November 1.

During 1939 the public housing program of New York City was reinforced by two new sources of funds, the City (through recent amendments to the City Occupancy Tax Law) and the State; and Gerard Swope, former head of General Electric, became Chairman of the New York City Housing Authority. Successful operation of the three public housing developments already occupied at the beginning of the year, First Houses (122 apartments), Williamsburg Houses (1622 apartments), and Harlem River Houses (574 apartments) was continued. The construction of Red Hook Houses, the 2545-apartment development in Brooklyn, was completed at a cost of \$12,229,695. Queensbridge, the 3149-apartment development in Long Island City costing \$13,936,686, the largest public housing development in the United States, was two-thirds occupied by the

end of the year and scheduled for completion within three more months. More than 100,000 applications were investigated and nearly 5000 families selected from among them, and moved from the slums into new homes in Red Hook and Queensbridge Houses. The first housing project in the United States financed solely by municipal funds—Vladeck City Houses—is under construction; three other projects, Vladeck Houses, South Jamaica Houses, and East River Houses, to house 3149, are under construction. Construction will begin shortly on two projects to house 1768 families; and plans are under way for a large project financed solely by State funds to house approximately 3800 families in the Navy Yard district in Brooklyn.

The New York City Housing Authority continued its slum clearance program and, in addition to the buildings razed to clear public housing sites, demolished more than 954 buildings, containing 8395 dwelling units.

The New York City Planning Commission has published plans for assigning 34 areas in the city's four largest boroughs for low-rent housing for 1,250,000 people.

General. Housing authorities note that the object of all public housing is to provide for the gap between the present low class housing costing three to six dollars per month per room which is all the tenants can afford and the 13 dollars a month per room which is the lowest price that can be offered by private capital. Plans to induce private capital to enter the "no-man's land" of residential construction are being studied by the Department of Commerce. Public housing built with the aid of the USHA is intended for families with annual incomes averaging below \$1200, the group for which private builders agree that they cannot afford to provide homes. Practically all present private construction is for families earning over \$1750 annually, thus leaving untouched the housing needs of the \$1200 to \$1750 income group. In line with this and with recent efforts in New York City to stimulate the entrance of private capital into the field of middle-class or white collar housing, the New York State Legislature is considering legislation to permit savings banks and life insurance companies to invest their funds in limited dividend housing companies. See ARCHITECTURE; BUILDING.

More than 200 American institutions of higher education—among them such universities as Harvard, Cornell, Maryland, Columbia, Dartmouth, New York University, and Xavier—offer courses related to some phase of public housing.

See ARCHITECTURE; BUILDING; LIVING COSTS AND STANDARDS.

B. P. ADAMS.

HOUSING OFFICIALS, NATIONAL ASSOCIATION OF. A non-profit and non-partisan organization founded in 1933 to be the clearing house on all phases of housing administration by public and semi-public agencies. It is the recognized professional association for collecting, sifting, and passing around the growing body of facts, experience and tested opinions on housing methods and practice. It has direct personal contacts with all types of housing agencies. Its program is kept flexible to meet the changing need of its members. Its only limitation is that all its activities further its major objective—to better all forms of public administrative practice in the housing of families of low and moderate income.

The organization publishes *Naho News*, *Housing Management Bulletin*, a *Housing Yearbook*, and several special publications. The membership is composed of three grades: active membership, available only to housing officials; associate membership, available to consumer, labor, and other citizen organizations, educators, and other private persons; and agency membership, open to agencies of local, state, and federal government directly engaged in provision or management of housing for families of low and moderate income, rural or urban. The 1939 annual meeting of the association was held at Cincinnati, Ohio, from December 6 to 8.

The officers for 1939 were: President, L. Kemper Williams, New Orleans, La.; vice-presidents, Nicola Giulii, Los Angeles and Dr. C.-E. A. Winslow, New Haven, Conn.; director, Coleman Woodbury. Headquarters are at 1313 East Sixtieth St., Chicago, Ill.

HOWARD, SIDNEY COE. An American dramatist, killed by a tractor left in gear at his farm near Tyringham, Mass., Aug. 23, 1939. He was born in Oakland, Calif., June 26, 1891 and educated at the University of California (A.B., 1915). During 1916 he worked under George P. Baker at his "47 Workshop" at Harvard University. He saw service with the American Ambulance on the Western Front and in the Balkans and subsequently served in the aviation service. After the War he joined the editorial staff of *Life* and in 1922 was appointed its literary editor. In the following year he was a special feature writer for the *New Republic* and *Hearst's International Magazine*.

In 1921, his first play, *Swords*, was produced, but it was not until 1924 that he was recognized as one of America's leading playwrights. In that year the Theatre Guild produced his *They Knew What They Wanted*, awarded the Pulitzer Prize in 1925 as the best American play of the year. This was followed by *Lucky Sam McCarter* (1925); *Ned McCobb's Daughter* (1926); *The Silver Cord* (1926), which was very popular; *The Late Christopher Bean* (1932), adapted from the French; *Alien Corn* (1933); *Dodsworth* (1934), adopted from the novel by Sinclair Lewis; *Yellow Jack* (1934), with Paul de Kruif; *Paths of Glory* (1935), adapted from the novel, and *The Ghost of Yankee Doodle* (1937).

In 1938, with Robert E. Sherwood, Elmer Rice, Maxwell Anderson, and S. N. Behrman, he formed the Playwright's Company to produce their own plays. Though none of his work was given in the first year, plans were made to produce his *Madam, Will You Walk?* during the 1939-40 season, and also his adaptation of Carl Van Doren's biography, *Benjamin Franklin*, on which he was at work. Also, he was working on an adaptation of Graham Green's novel, *Brighton Rock*, for production in London.

Mr. Howard adapted *S.S. Tenacity* (1922) from the French, *Casanova* (1923) from the Spanish, *Sancho Panza* (1923) from the Hungarian, *The Last Night of Don Juan* (1925) from the French, *Olympia* (1928) from the Hungarian, *Marseilles* (1930) from the French, and *Ode to Liberty* (1934), also from the French; and had written *Bewitched* (1924) with Edward Sheldon, *Salvation* (1928), with Charles McArthur, and *Half-Gods* (1929). Also, with Robert Dunn he wrote *The Labor Spy* (1921) and in 1924 he published a book of fiction, *Three Flights Up*. His adaptations for the motion pictures included *Bull Dog Drum-*

mond, *Arrowsmith*, *Dodsworth*, *Gone With the Wind*, etc.

A member of the National Institute of Arts and Letters and of the American Academy of Arts and Letters, he served as president of the American Dramatists Guild during 1935-37. In 1922 he was married to Clare Eames, and in 1931, to Leopoldine Damrosch.

HOWARD UNIVERSITY. A nonsectarian coeducational institution in Washington, D. C., open to students without regard to race, but principally for the education of Negroes. The registration for the first semester of 1939-40 was 2393. The faculty numbered 244; 153 of this number were full-time members and 91 part-time, with a full-time equivalent of 171 persons. The total endowment amounted to \$979,098. The total appropriation of the U.S. Government for 1939-40 was \$723,364 for current expenses and \$461,627 for construction. The Founders Library, a new library building, was completed and put in operation at a cost of \$1,105,000. A new Men's Dormitory is under construction and will be completed early in 1940, at a cost of \$646,200, the funds being supplied by the PWA. The library contains 119,146 volumes. President, Mordecai W. Johnson, S.T.M., D.D., LL.D.

HOWLAND ISLAND. See **BAKER, HOWLAND, AND JARVIS ISLANDS.**

HUDSON COUNTY. See **NEW JERSEY.**

HUNAN. See **CHINA** under *Area and Population*.

HUNTER COLLEGE OF THE CITY OF NEW YORK. A college of liberal arts and sciences in New York City, established in 1870 for the higher education of women. Maintained by public funds, it is one of the four municipal colleges governed by the Board of Higher Education, the other three being The City College for men and Brooklyn College and Queens College for men and women. The enrollment for the fall semester of 1939 included 7000 students in the Day Session and 4277 students in the Evening and Extension Sessions. The enrollment in the Summer Session of 1939 was 2283. The teaching staff for Day, Evening, and Extension Sessions numbered 603 in the fall semester of 1939. The library contains 112,000 volumes. A new building of 16 stories is under process of erection at Park Avenue and Sixty-eighth Street and should be ready for occupancy in 1940. President: Eugene A. Colligan, A.M., Ph.D., LL.D. Acting President: Dean George N. Shuster, A.M., D. Litt.

HUNGARY. A kingdom in central Europe. Capital, Budapest. Regent in 1939, Nicholas Horthy de Nagybanya.

Area and Population. Including the territorial annexations of 1938 and 1939, the area of Hungary was estimated at 45,253 square miles and the population at 10,320,000. Of this total, 4566 square miles and 1,027,450 inhabitants were ceded by Czechoslovakia under the Italo-German arbitral award of Nov. 2, 1938, and about 4966 square miles and 633,057 inhabitants were acquired through the annexation of Carpatho-Ukraine (Ruthenia) and additional parts of Slovakia in March and April of 1939. Living births in 1938 numbered 176,733 (19.5 per 1000); deaths, 129,345 (14.3 per 1000); marriages, 73,287 (8.1 per 1000). Estimated populations of the chief cities in 1937 were: Budapest, 1,059,131; Szeged, 140,182; Debrecen, 126,588; Pesterzsébet, 84,653; Kecskemét, 82,997; Kispeszt, 75,671; Újpest, 74,647; Pécs, 71,848.

National Defense. Military service has been

compulsory since 1938. On Nov. 1, 1939, the army consisted of 400,000 active soldiers and 300,000 trained reserves, according to the Adjutant General's Office, Washington, D. C. The air force personnel was 4500 on Jan. 1, 1939. There is no navy, though several small vessels patrol the Danube. See MILITARY PROGRESS.

Education and Religion. In 1938 about 9.6 per cent of the population, six years and over, was illiterate. According to the 1930 census, Roman Catholics comprised 64.9 per cent of the population; Helvetian Evangelicals, 20.0 per cent; Augsburg Evangelicals, 6.1 per cent; and Jews, 5.1 per cent.

Production. About 51.8 per cent of the working population is engaged in agriculture, 23 per cent in industry and mining, 9.3 per cent in trade, transportations, and communications. There were 2,727,000 acres under forest in 1937. Yields of the chief cereals in 1939 were (in metric tons): Wheat, 3,039,000; barley, 780,500; rye, 896,900; oats, 356,700; corn, 2,250,900. Other products in 1938 (in metric tons except where otherwise specified) were: Potatoes, 2,500,000; beet sugar, 127,300; tobacco, 20,400; coal, 1,042,000; iron, 105,000; bauxite, 540,700; beer, 7,608,000 gal.; wine, 80,836,000 gal.

Foreign Trade. Merchandise imports in 1938 were valued at 418,169,000 pengös (475,483,000 in 1937) and exports at 521,935,000 pengös (588,618,000 in 1937). The 1938 exports were chiefly distributed as follows (in pengös): Germany, 239,137,000; Italy, 44,227,000; Great Britain, 41,503,000; Czecho-Slovakia, 21,778,000; Rumania, 20,974,000; Switzerland, 16,779,000; Yugoslavia, 15,598,000; United States, 12,720,000. Of the imports (valued in pengös), Germany supplied 170,837,000; Rumania, 42,259,000; Czecho-Slovakia, 30,341,000; Italy, 25,362,000; Great Britain, 25,149,000; Yugoslavia, 21,704,000; United States, 21,367,000. See IMPORTS AND EXPORTS.

Finance. The budget for the fiscal year ending June 30, 1940, was estimated to balance at 1,732,000,000 pengös. In 1939 revenue was estimated at 1,335,000,000 pengös (1,119,000,000 in 1938) and expenditures at 1,335,000,000 (1,267,000,000 in 1938). Actual receipts for the fiscal year ending June 30, 1937, were 1,312,000,000 pengös; expenditures, 1,305,000,000 pengös. The total public debt on June 30, 1938, amounted to 1,597,700,000 pengös. The average exchange value of the pengö was \$0.1973 in 1938 and \$0.1924 in 1939.

Transportation. The Hungarian railways, with some 5700 miles of line, carried a total of 1,629,000,000 ton-miles of freight in 1938. Highways in 1939 extended 39,569 miles (see ROADS AND STREETS). At the end of 1939 there were two air services with a weekly flying mileage of 9576.

Government. Politically Hungary is a monarchy based on the constitutional system in force prior to Oct. 31, 1918, and with a vacant throne. The head of the State in 1939 was the Regent, Admiral Nicholas Horthy (elected Mar. 1, 1920). Parliamentary government is in force. The Parliament comprises an upper and a lower house. The upper house consists of 243 members; a few belong by title of birth, others are representatives of certain privileged classes of electors, holders of divers high dignities, and individuals appointed for life by the head of the State. The lower house is elected according to districts, by male and female suffrage—in 1939, for the first time, the secret ballot was required for the election of the deputies. Twelve parties are represented in the lower house.

HISTORY

More Territory Annexed. When the German forces seized the greater part of Czecho-Slovakia on and after Mar. 15, 1939, Hungary improved the moment by taking possession of the easternmost of the four divisions of the doomed republic. This was Carpatho-Ukraine, otherwise known as Ruthenia; it had an area of 4283 square miles, somewhat sparsely populated by 552,124 inhabitants, according to a census taken in 1930. The exact limits of the territory occupied in this district by Hungary and the number of the inhabitants therein could not be stated with certainty at the end of the year. The population did not everywhere allow peaceful possession. Inhabitants of inaccessible parts kept up guerrilla warfare for some time. Hungary had hoped that by holding the region she would have the advantage of contact with Poland, for mutual aid and protection; but the extinction of Poland, following within about six months, withered this hope. Carpatho-Ukraine had formed the eastern tip of the territory that Hungary lost to Czecho-Slovakia by the redistribution effected at the end of the war of 1914-18.

During the period that followed the suppression of Czecho-Slovakia as an independent nation. Hungarian forces made some extension of the Slovak territory previously occupied (in 1938) in the first partition of the country. Announcements were made as to understandings reached with the Slovak authorities, by which Hungary appeared to have gained some hundreds of square miles of additional territory in the aggregate. The Premier, announcing in March the annexation of Carpatho-Ukraine, indicated that autonomy was being granted to the population. In connection with the main settlement with Slovakia as to Hungarian acquisitions, made on April 4, it was announced that Hungary had gained 1,622,000 in added population from territorial gains since 1938. But Hungary's territorial ambitions were by no means satisfied.

Survival Among Clashing Nations. Hungary's efforts to keep unhurt in the collision of German, Italian, Polish, Rumanian, and other policies in the Balkan area concerned the nation more deeply than did the acquisition of territory. The fall of Czecho-Slovakia extended the frontier along which German and Hungarian domination touched. The partition of Poland by Germany and Russia in September gave Hungary a new neighbor, Russia, with which she had been unfriendly; and this new Russian frontier was soon in process of fortification by Hungary. The breakdown of German and Italian co-operation made it difficult to take any course that would suit both the powers on which Hungarian security depended. The advent of the Franco-British war against Germany threatened to involve the Hungarian Government in another major European conflict.

The relations with Germany were complicated by the fact that Germany as now constituted took more than two-fifths of Hungary's exports and by the existence of an active Nazi party, the Hungarists, within the kingdom itself. The ministry's policy was, as in 1938, to continue close concord in relations with Germany as to trade and external matters yet at the same time to oppose the Germanization of Hungary's internal politics and social system.

In continuing the external part of this policy Hungary went so far as to reverse its attitude to Russia. The Hungarians had on Feb. 24, 1939, given their adherence to the anti-Comintern agreement of Germany, Japan, and Italy; and Russia, on

the same day, severed diplomatic relations with Hungary; but within a few weeks after Germany's non-aggression agreement with Russia, Hungary followed suit, to the extent of appointing a Minister to Moscow (October 5), despite the ruling landholders' dread of a renewal of the Bolshevik influence that they had tasted in 1919. The step committed the government somewhat definitely to German hegemony as against the Italian influence, which remained strongly anti-Russian. The entry into the anti-Comintern agreement was followed, early in April, by Hungary's resignation from the League of Nations, lest—as the Foreign Minister, Count Stephen Csáky, explained to a committee of Parliament—continued membership might eventually cause a clash with the country's own interests or those of its friends.

These incidents did not signify any eagerness on Hungary's part to join either Germany or Italy in immediate enterprises of conquest. On the contrary, Regent Horthy, in a speech to Parliament in June, made an indirect appeal to the Pope to propose to the powers that they settle their disagreements by conference. Later, after the outbreak of war in September, Hungary failed to take the customary step of declaring neutrality, but the government avoided giving any immediate offense to the opponents of Germany or committing the country more closely to the German side. The supply of agricultural products to Germany was liberally maintained: so much so that by the end of the year the rationing of foods had begun, in this land of agricultural surplus. The efforts of the Franco-British alliance and of the southern Balkan powers to bring Hungary into a combination for creating an anti-German front naturally bore no fruit, for Hungary found no incentive to trade its German market for a dangerous belligerency, nor for giving up its long nursed intention of eventually recovering Transylvania and other territory from Rumania.

The Ministry. A ministerial change occurred in February. Béla Imrédy resigned as Premier, and Count Paul Teleki succeeded him. Imrédy expressed two reasons for resigning: he had found his cabinet's situation toward the Parliament unsatisfactory since the defection of some 60 members from the government's side in the previous November; and,—important because of the government's anti-Jewish policy—he had recently found documents showing one of his great-grandfathers to have been a Christianized Jew. The Jewish strain did not suffice to create a legal disability, but it tended to diminish the influence of a premier in an anti-Jewish government.

Teleki held to his predecessor's general course of policy. He soon dissolved the Parliament and called an election, held at the end of May. The high cost of electioneering, said to approximate \$12,000 for a candidacy, gave the landed magnates their usual advantage. The government party took 180 seats out of the 262 in the lower house; this increased the government's delegation by about 11. Nazis got 53 seats, distributed among the Hungarists and other Nazi organizations. Their representation in the previous House had been but six; they made their gains chiefly at the expense of Agrarians and of Socialists. The ministry acquired a huge majority of supporters, while the Nazis' gains, at first alarming, led to discord among their group in the new chamber and thus ultimately tended to weakness.

Teleki, as well as his predecessor Imrédy, worked persistently to check the Nazi political

groups. The dissolution of the Hungarist movement was declared on February 25 by the Minister of the Interior, though without immediately apparent result. Imrédy, previously, had launched a Hungarian Life Movement, for fervent patriotism, strict morality, discipline, unity, and abnegation; it held out a project of social justice; and its appeal was of a sort to compete with that of the Nazi propaganda; but its progress in the course of the year was not evident. Teleki, in August, accused the Hungarists of receiving funds from abroad and warned their German friends "not to make things difficult for us." An alleged plot for an outbreak of Nazi extremists led, October 16, to the arrest of 140 of the outlawed Hungarists; some convictions and further arrests followed.

The government had to face in December another form of popular disquiet, brought on by Russia's attack on Finland. The educated classes entertained a conviction of racial kinship with the Finnish people, and anti-Russian sentiment was already widespread. Though now in friendly relations with Russia the government tolerated to a certain extent unofficial measures to send volunteers to help the Finns.

Treatment of the Jews. New and more severe legislation against Jews was enacted in May. They were allowed to engage in business and professions only to certain percentages—from 6 to 12—of the total numbers thus engaged; the supposedly great number who would consequently have to emigrate and find new livings elsewhere had five years' in which to be gradually removed, a fraction every three months; exemption was allowed to those whose strain had been Hungarian ever since 1848 and who professed Christianity by not later than 1919, and to veterans of the wars; Jews were excluded from public and governmental services; they still might vote, but only for candidates of their own race; finally, Jews' holdings of farming land in excess of half an acre each were to be taken by the government, paying compensation therefor. With regard to the provision as to farm land, the intention was to use the land thus obtained as an immediate installment toward the program of agrarian distribution.

Agrarian Legislation. A new general plan for distributing land among a million or more landless peasantry was proposed to the Parliament; the lower house voted it, but the upper house, toward the end of the year, still held out against it. The bill called for the appropriation of about 1,500,000 acres in the proportion of 10 per cent of estates exceeding 750 acres.

Payment on War Debt. Hungary again, in 1939 made semi-annual payments of \$9828, totaling 1 per cent of the principal owed to the United States Government.

See also CZECHO-SLOVAKIA; FASCISM; JEWS; MILITARY PROGRESS; ITALY, POLAND, RUMANIA, and YUGOSLAVIA under *History*.

HUPEH. See CHINA under *Area and Population*.

HURRICANE. See FORESTRY; METEOROLOGY.

HYDROMETALLURGY. See METALLURGY.

HYDROPONICS. See SOILS.

ICC. Interstate Commerce Commission (q.v.).

ICELAND. An independent island state between Scotland and Greenland. Area, 39,709 square miles; population (Jan. 1, 1938), 117,692. Chief towns: Reykjavik (capital), 36,103 inhabitants in 1937; Akureyri, 4674; Hafnarfjörður, 3673; Vestmannaeyjar, 3480. During 1937 there were 2365 births, 1312 deaths, and 645 marriages.

Production and Trade. Potatoes, turnips, and hay are the chief agricultural crops. The output of the sea fisheries in 1936 totaled 199,500 tons valued at 22,200,000 crowns. Livestock (1937): 654,000 sheep, 47,000 horses, 38,000 cattle, and 2000 goats. The main imports consisted of textiles, metals, machinery, timber, coal, and cereals. Wool, fish, frozen mutton, and sheepskins were the main exports. In 1938, imports were valued at 49,100,000 crowns; exports, 57,800,000 crowns (crown equaled approximately \$0.21 for 1938).

Communications. In 1937 the 394 merchant vessels of Iceland aggregated 39,906 gross tons. Iceland has no railways. There were, in 1938, 2982 miles of roads, and over 9700 miles of telegraph and telephone lines. During 1938-39 the Icelandic Air lines completed 157 flights (including 94 between Reykjavik and Akureyri) for a total of 49,710 miles; 1100 passengers and 5328 lb. of mail were carried.

Government. Budget estimates (1939): revenue, 17,904,960 crowns; expenditure, 16,705,791 crowns. The public debt on Dec. 31, 1937, totaled 46,639,000 crowns. On Apr. 5, 1939 the crown was devalued by 18 per cent (£ sterling equals 27 crowns instead of 22.15 crowns). Iceland and Denmark are free sovereign states, united by one King, and by the agreement embodied in the Act of Union of Nov. 30, 1918. According to the Charter of May 18, 1920 (amended in 1934), the King exercises executive power, through a responsible ministry. Legislative power rests conjointly with the King and the parliament (called Althing) consisting of not more than 49 members (one-third of whom are elected to the upper chamber by the whole Althing; the other two-thirds form the lower chamber). The Act of Union between Iceland and Denmark will expire in 1943, and on that date it may be denounced by either party. During the fall of 1938, the parliament voted to assume full control of its national affairs in 1943. The opinion of the people on this issue is to be obtained by a referendum during 1940. Ruler, King Christian X of Iceland and Denmark; Premier, Hermann Jónasson (appointed July 29, 1934; Progressive).

History. During March, 1939, the German Lufthansa sought the permission of the Icelandic government for the establishment of bases for an air service between Iceland and Germany. In parliament, the prime minister, Hermann Jónasson, said that no foreign company would be granted any air concession in Iceland. A British Royal Air Force flying boat was forced down by fog on Sept. 26, 1939, at Raufarhofen. Two days later the flying boat left for Britain. The government of Iceland charged that the members of the crew had broken their parole after being interned by the authorities. According to the Air Ministry in London, the pilot said that he did not believe that he was on parole but the British government agreed that the pilot should return to Iceland as soon as possible to remain for the duration of the war.

IDAHO. Area and Population. Area, 83,888 square miles; included (1930) water, 534 square miles. Population: Apr. 1, 1930 (census), 445,032; July 1, 1937 (Federal estimate), 493,000; 1920 (census), 431,866. Boise, the capital, had (1930) 21,544 inhabitants.

Agriculture. Idaho harvested, in 1939, 2,706,000 acres of the principal crops. Tame hay, on 1,040,000 acres, made 2,196,000 tons (estimated value on the farm, \$14,494,000); wheat, on 893,-

000 acres, 22,624,000 bu. (\$13,348,000); potatoes, 129,000 acres, 29,670,000 bu. (\$11,275,000); dry beans, 110,000 acres, 1,551,000 100-lb. bags (\$3,996,000); sugar beets, 73,000 acres, 972,000 tons (\$4,970,000, on somewhat greater production of 1938); apples, gathered for market, 2,150,000 bu. (\$1,290,000); barley, 155,000 acres, 5,580,000 bu. (\$1,953,000); dry peas, 56,000 acres, 1,092,000 bu. (\$1,747,000); oats, 164,000 acres, 6,232,000 bu. (\$1,745,000).

Manufacturing. Establishments engaged in manufacturing in Idaho numbered in 1937, 533 (in 1935, 455); they had in their service in 1937, 12,797 wage earners (in 1935, 9635), and paid wages totaling \$16,249,586 (in 1935, \$10,738,374). Products from manufactories had a total value, for 1937, of \$101,324,545 (for 1935, \$64,987,613), to which manufacture contributed \$37,691,241 (in 1935, \$25,668,125). Much of the industry had to do with processing the products of husbandry for the consumer. Butter made in 47 establishments classed as factories had a value of \$11,963,887; Cheese, made in 25 factories, of \$1,993,522. Eight refineries made beet sugar to the value of \$7,758,654; meat-packers' output totaled \$2,503,783. The amount of the lumber and timber products, \$29,213,931, was, however, the greatest single item among the State's manufactures of 1937; the wage earners engaged in this production numbered 8040, or nearly two-thirds of the manufacturing labor of the State, and they received \$10,604,364 in wages, or about two-thirds of the whole manufacturing pay of the State.

Mineral Production. Mines in Idaho increased production of ores of gold, silver, copper, lead, and zinc to the total value, in recoverable metals, of \$30,166,000 for 1939 (preliminary approximation), from \$29,028,103 for 1938. These five metals had furnished more than nine-tenths of all the mineral value produced in 1937. The production of gold rose to 114,000 oz. for 1939, from 103,513 for 1938, and thus exceeded any year's quantity subsequent to that of 1895; by value the yearly gold produced rose to \$3,990,000 (1939) from \$3,622,955 (1938). The mining of lead decreased in quantity to some 181,400,000 lb. (1939), from 184,354,000 (1938); but increased in value of recoverable metal, to \$9,070,000 (1939), from \$8,480,284 (1938). The total for zinc rose by quantity to 93,150,000 lb. (1939) from 88,060,000 (1938); by value as well, to \$4,936,950 (1939), from \$4,226,880 (1938). The output of silver fell both in quantity and in value, to 17,199,600 oz. (1939), from 18,993,676 (1938); and to \$11,674,880 (1939), from \$12,278,470 (1938). The value of the production of copper for either year was somewhat below \$500,000. The Morning Mine of the Federal Mining and Smelting Company, greatest producer of zinc in the State, became also in 1939 the chief producer of lead, increasing its output while those of some other leading producers declined. The Ceur d'Alene region in Shoshone County yielded about seven-eighths of the year's totals, for the State, of silver, copper, lead, and zinc.

Education. For the academic year 1938-39, Idaho's inhabitants of school age (from 8 years to 18) plus about 39,500 others admissible to public schools were reported to number 145,262. Enrollments of pupils in the public schools totaled, for that year, 122,952; this comprised 88,371 in elementary study and 34,581 in high schools. The year's expenditures for public-school education amounted to \$12,114,312. The 3129 teachers in

elementary positions and the 1407 in high schools were paid respectively at the medians of \$926.24 and \$1311.62.

Political and Other Events. Fires in the forested areas of Idaho during the summer and early autumn were said by the State forester to have been the worst since 1931. Dry weather and high winds speeded their spread. An urban fire at Boise, starting in a lumber yard, August 11, destroyed the Boing Arena, a show-house for sporting exhibitions, and did damage said to approximate \$1,000,000.

Officers. Idaho's chief officers, serving in 1939, were: Governor, C. A. Bottolfson (Rep.); Lieutenant-Governor, Donald S. Whitehead; Secretary of State, George H. Curtis; Attorney-General, J. W. Taylor; Auditor, Calvin E. Wright; Treasurer, Myrtle P. Enking; Superintendent of Public Instruction, John W. Condie.

IDAHO, UNIVERSITY OF. A coeducational State institution of higher learning at Moscow, Ida., founded in 1889, with a southern branch at Pocatello. The total regular collegiate enrollment at Moscow in the autumn of 1939 was 2823, and at Pocatello 924. The enrollment for the 1939 summer session was 894. The faculty numbered approximately 200. The endowment principal amounted to \$2,597,989, June 30, 1939, and the income for the year 1938-39 was \$1,042,129, not including income from auxiliary enterprises or receipts from N.Y.A., PWA, or bond sales. During the year the University observed its semi-centennial, honoring J. W. Brigham, 82-year-old farmer, the only living member of the Fifteenth and last Idaho Territorial Legislature, who sponsored the legislative act creating the institution. The library contains approximately 100,000 volumes. President, Harrison C. Dale.

IFNI. See SPANISH WEST AFRICA.

ILLINOIS. Area and Population. Area, 56,665 square miles, exclusive of State's part of Lake Michigan; included other water, 622 square miles. Population: Apr. 1, 1930 (census), 7,630,654; July 1, 1937 (Federal estimate), 7,878,000; 1920 (census), 6,485,280. Chicago had (1930) 3,376,438 inhabitants. Peoria, 104,969; Springfield, the capital, 71,864.

Agriculture. Farmers in Illinois harvested, in 1939, 18,418,400 acres. Corn, the chief crop, on 8,051,000 acres, made 418,652,000 bushels (estimated value on the farm, \$217,699,000); the harvested acreage of corn was the lowest after 1934, but the yield to the acre, 52 bushels, averaged exceptionally high. A feature of 1939 was the rise of soybeans to the rank of the State's second crop in point of estimated farm value; on 1,854,000 acres soybeans made 45,423,000 bushels, in value \$34,067,000. Tame hay, on 2,877,000 acres, 4,183,000 tons (\$26,771,000); wheat, 1,865,000 acres, 39,021,000 bushels (\$26,534,000); oats, 3,118,000 acres, 93,540,000 bushels (\$25,256,000); potatoes, 37,000 acres, 3,441,000 bushels (\$2,925,000); barley, 169,000 acres, 4,140,000 bushels (\$1,697,000).

Manufactures. The manufacturing establishments in Illinois numbered, in 1937, 11,764 (in 1935, 12,018); they employed 668,841 wage earners (in 1935, 525,945); and paid wages totaling \$862,793,453 (in 1935, \$581,388,171). Their products attained the total value of \$5,304,282,629 (for 1935, \$3,743,099,217). But as the industry of the State was highly diversified, much of the finished product of one line of manufacture became the raw material of another, and its value thus reappeared in the latter's total production; so that the

totals of value as stated above express the output of the separate manufacturing establishments, but exceed the total value of separate goods put out by the manufacturing industry as a whole. The value added to material by manufacture, not subject to similar duplications was, in Illinois \$2,319,035,734 for 1937 (for 1935, \$1,612,068,627). Manufactures connected with metals and with husbandry held the lead. Meat-packing establishments attained for 1937 the output of \$584,059,504, the highest for any group in the official classifications; but the meat packers' wage earners, 26,120, and the contribution of their processes to the value of their products, \$85,668,499, were surpassed by totals in other groups. Steel works and rolling mills employed 41,246 wage earners, produced \$287,207,667 in goods, and contributed thereto \$127,486,751 by manufacture; makers of agricultural implements, a long established group in Illinois industry, employed 38,912 wage earners, attained an output of \$282,223,674, and contributed to this total \$133,038,598 by their own processes; producers of electrical machinery, apparatus, and supplies employed 34,958 wage earners, made goods to the value of \$221,523,649, and contributed thereto by their processes \$148,904,509. A very great total of separately classified industries' production in ferrous and other metal work depended largely on the steelworks' output for its raw material. The making of electric and railroad cars produced \$67,522,579 in value of output.

About two-thirds of the State's manufacturing activity was concentrated in Cook County (mainly Chicago). Here in 1937, 8288 establishments employed 438,171 wage earners, paid them \$584,210,656, made goods to the value of \$3,647,785,127, and contributed to this sum, by manufacture, \$1,594,642,112. Cicero's manufactures attained \$146,326,019; Peoria's, \$87,288,610; Rockford's, \$82,617,871.

Mineral Production. More striking than any other of the year's changes in the production of the State's native minerals, a swift ascent in the yield of petroleum brought the daily rate of production, by the middle of August, 1939, close to 300,000 barrels, approximating the rate of 100,000,000 barrels a year, as against an actual production, for as recent a year as 1936, of but 4,475,000 barrels. The new exploitation of petroleum in the State had begun in 1937 in Clay and Richland counties in east-central Illinois. These areas continued as leading producers in 1938, but new discoveries in the Centralia district and in Fayette County greatly expanded production, and oil was found in the Devonian structure in the formerly worked Sandoval area. Intense competition in drilling brought the number of completions of oil wells to 1806 for 1938. In 1939 the exploitation kept up its pace, in spite of dissatisfaction among the longer established leading producers among the States, some of them enforcing a fairly strict limitation on their own producers and therefore ill pleased to have a newcomer break down the market for crude petroleum; in Illinois the plea was made, for unrestricted production, that the State would make an undue sacrifice if it should agree to limit the output before it had determined how great a production its resources justified.

Coal, which had long stood as the chief component of the State's yearly production, by value, of native minerals, provided \$89,271,000, or two-thirds of the \$133,437,554 constituting that total for 1937. The yearly quantity of the production of coal declined to about 40,650,000 net tons, for

1938, from 51,602,000 for 1937. Of cement, the producers' shipments, 4,357,119 barrels for 1938, fell below the total of 4,713,734 barrels for 1937; by value, they diminished to \$5,993,644, from \$6,756,747. The production of clay products (exclusive of pottery) attained \$6,545,686 for 1937.

Apart from the production of its native minerals, there continued in Illinois a great industry in the production of iron and steel and in the making of coke, largely used in reducing iron ore brought from the mines of the Lake Superior region. From coal dug mainly in West Virginia, ovens in Illinois produced 1,738,106 net tons of coke, in 1938, falling short of the total of 2,998,663 tons (value, \$20,213,129) for 1937. Pig iron, shipped from furnaces to the quantity of 1,519,572 gross tons for 1938, fell sharply below the total of 3,357,959 tons, for 1937; by value, the total fell to \$30,899,012, from \$70,893,278. Open-hearth steel ingots and castings made in 1938 totaled 1,950,224 gross tons.

Education. For the academic year 1937-38 (the latest for which all the data that follow had been published) Illinois reported 1,936,806 inhabitants of school age—from 6 years to 21. Enrollments of all pupils in public schools totaled 1,321,738; this comprised 962,970 in the elementary group and 358,768 in high schools. The year's expenditure for public-school education totaled \$138,415,910. The teachers in public schools numbered 48,663; their salaries for the year averaged \$1502.

Legislation. The regular biennial session of the Legislature started January 4 and ended June 30. It made appropriations calculated to total \$464,000,000, falling short by \$14,000,000 of the total ascribed to the previous Legislature. Republicans, holding a slight majority in the lower house, espoused a policy of reducing expenditure but were reported not to be able to count on all their group in all votes. Governor Horner was ill and out of the State for about the first half of the session.

An act was passed to enable the Chicago area to raise and spend \$60,000,000 for elevated highways that would take the through-going motor-borne travel off some of the most heavily used streets; city and county, for this purpose, were authorized to borrow on the security of future receipts from the proceeds of the tax on gasoline. The yearly allowable levy in Chicago for the support of public schools was made \$48,000,000, or \$3,000,000 above the previous level. The pre-adjudication of taxes imposed in Chicago, much as under an act of 1937 later declared invalid, was enacted.

Rates of weekly unemployment compensation were increased and the waiting period before the payments was reduced to two weeks. Women were declared eligible to serve as jurors. The repeal of about 400 obsolete laws was enacted. Medical tests for determining if syphilis were present were required in pregnancy.

Governor Horner vetoed a measure to increase the maximum monthly rate of public assistance for the aged poor to \$40; two days after his veto, Congress enacted the Federal social security act of 1939, permitting a maximum monthly rate of \$20 for the Federal contribution to such assistance. Horner then accordingly recalled the adjourned Legislature in a brief special session to repass the measure, vetoed by him because of the lack of Federal matching toward making up the additions to payments.

Political and Other Events. A serious and

protracted illness kept Governor Horner laid up at Miami, Fla., where he had gone in the previous November, for the first three months of 1939. Lieutenant-Governor Stelle thus became the constitutional temporary head of the State Government. Although a frequent opponent of the political plans of Horner in the past, Stelle created an administrative board of four officials, all in harmony with Horner, and governed in accord with this so-called regency. Horner resumed his duties at Springfield early in April but took little active direction of legislative policy. For this he made up by vetoing numerous measures and some \$4,000,000 in items of appropriation; in addition to the proposed lottery for the support of a housing plan and the intended Toll Bridge Authority (feared as likely to promote the unloading of old toll bridges on the State), he vetoed a reportedly ill-drawn bill for a State pension system, two measures to delegate to commissions authority to regulate in economic fields, and a bill to forbid building highways with stone crushed by convicts' labor.

Upon the death of the State's senior U.S. Senator, James Hamilton Lewis (q.v.), the Governor (April 14) appointed James M. Slattery of Chicago to be Senator. An act of 1933, reclassifying the prisons and thus making the old Pontiac Reformatory a penitentiary threw into doubt the right of the State to keep there confined several hundred convicts who had originally been consigned to the reformatory. A decision in Criminal Court (June 2) held one prisoner so confined to have been deprived of a constitutional right. Taking a further step, in compliance with the order given by the U.S. Supreme Court in 1930 in termination of the suit of several lake-bordering States against Illinois to prevent further lowering of the Great Lakes' level, the Chicago Sanitary District reduced (January 1) the release of water from Lake Michigan, to pass down the Illinois River, to 1333 cu. ft. a second, as against 5000 cu. ft. for 1938.

A Federal effort, the third on the part of the agricultural branch of the Administration, was made to regulate the traffic between producers and distributors furnishing milk to Chicago and its surroundings. Hearings on the subject were held in Chicago in the course of June, by a representative of the AAA, on the request of associations, of which one represented a great majority of the dairy farmers, some 16,000 in all, supplying the area. On August 1 these dairy farmers, chiefly voting through this association as their agent, accepted a submitted proposal that the Secretary of Agriculture fix the prices to be paid for their product. The proposal was thereafter officially declared ratified and in force as a marketing agreement, and the prices for milk were raised, at both ends of the journey to the consumer, early in September.

Events in Chicago. Edward J. Kelly (Dem.) was re-elected Mayor of Chicago, April 4, for a second term of four years, defeating Dwight H. Green (Rep.). An unofficial report gave Kelly's vote as 820,517; that for Green, 637,107. Though Kelly exceeded his total of 1935, the margin of his plurality was reduced to 183,410, as against about 540,000 for 1935.

The cost of Chicago's projected subway had been figured late in 1938 as \$40,000,000, and the Federal PWA had on this basis agreed to contribute \$18,000,000 toward the total, while Chicago would furnish the rest, \$22,000,000, from

its traction fund. However, P. J. Harrington, the city's commissioner of subways and traction, announced that the estimated cost had risen to \$47,000,000 and that in the inability of the PWA to supply further money, the city would have to supply the additional \$7,000,000. As explaining the increased expense, engineers cited the disclosure of soft ground in the downtown district and the resulting need to bore with the aid of great steel shields so as to work in safety and cause less disturbance to high buildings above.

Some of the distinctive features of the public finances of Chicago remained much the same. The sum carried on the books as unpaid taxes was about \$435,000,000 at the end of June; the rate of the tax on property for the year 1938 was announced, Mar. 14, 1939, as \$9.12 per \$100 of assessed valuation. A plan for the unification of the traction system, put forward in proceedings before Federal Judge James H. Wilkerson, met with difficulty in April on account of objections from some of the bondholders. The demolition of the 20-story Capitol Building in the Loop district, formerly for years the world's largest and tallest office building, was cited as one of the effects of the city's high tax rates.

Officers. The chief officers of Illinois, serving in 1939, were: Governor, Henry Horner (Dem.); Lieutenant-Governor, John Stelle; Secretary of State, Edward J. Hughes; Auditor, Edward J. Barrett; Treasurer, Louie E. Lewis; Attorney-General, John E. Cassidy; Superintendent of Public Instruction, John A. Wieland.

ILLINOIS, UNIVERSITY OF. A coeducational State institution of higher learning in Urbana-Champaign, Ill., founded in 1867, with professional schools of medicine, dentistry, and pharmacy located in Chicago. The enrollment in the autumn of 1939 was 13,894, of whom 10,393 were men and 3501 were women. The summer session enrollment was 3894, of whom 2314 were men and 1580 were women. The number of persons on the teaching staff above the rank of assistant was 1039. The operating income for the year 1938-39 was \$8,179,648, of which \$5,045,154 was from the State. Expenditures for capital improvements amounted to \$352,137 in 1938-39, \$114,632 of which came from special state appropriations. Federal grants amounting to \$572,728 were made available during the year for buildings now in process of construction. The productive funds from Federal endowment totaled \$649,013, and from private gifts, \$692,033. The library contained 1,175,692 volumes and 328,921 pamphlets. President, Arthur Cutts Willard, B.S., LL.D.

ILLITERACY. See articles on various foreign countries under *Education*.

IMMIGRATION AND EMIGRATION. During the fiscal year ended June 30, 1939, 82,998 immigrants were admitted to the United States. This was the highest figure reported since 1931, and represented a steady increase as compared with the total of 67,895 immigrants for the fiscal year 1938, 50,244 for 1937 and 36,329 for 1936. The U.S. Commissioner of Immigration, in his annual report, called attention to the sharp increase in immigration from Central Europe since the German annexation of Austria in March, 1938. He also stated that the few additional nonimmigrants admitted (185,333 in 1939 as compared with 184,802 in 1938) disproved the sensational stories that had appeared in certain newspapers and magazines to the effect that the country was being flooded with alien visitors. The admissions

and departures of aliens by countries is shown in the following table.

TABLE I—IMMIGRANT ALIENS¹ ADMITTED AND EMIGRANT ALIENS DEPARTED, FISCAL YEARS 1938 AND 1939, BY COUNTRIES OF LAST OR INTENDED FUTURE PERMANENT RESIDENCE

Countries	Immigrants		Emigrants	
	1938	1939	1938	1939
All countries	67,895	82,998	25,210	26,651
Europe	44,495	63,138	13,185	13,770
Albania	254	229	46	31
Belgium	478	683	129	121
Bulgaria	123	129	26	36
Czechoslovakia	3,203	2,896	224	145
Denmark	366	306	223	199
Estonia	46	93	18	17
Finland	421	411	267	197
France	1,475	1,907	477	469
Germany	17,199	33,515	2,270	4,211
Austria				
Great Britain				
England	1,890	2,739	2,034	1,639
Scotland	338	277	892	651
Wales	34	42	65	47
Greece	1,009	907	460	470
Hungary	973	1,348	119	124
Ireland (Eire)	914	1,101	652	676
Italy	7,712	6,570	1,788	1,829
Latvia	125	168	20	18
Lithuania	305	290	99	43
Netherlands	698	1,259	209	165
Northern Ireland	171	88	168	158
Norway	635	527	506	455
Poland	2,403	3,072	400	315
Portugal	374	422	187	283
Rumania	346	421	152	126
Soviet Union	63	59	108	112
Spain	379	257	132	133
Sweden	385	342	976	557
Switzerland	617	1,237	171	163
Yugoslavia	1,019	1,090	290	302
Other Europe	540	753	77	78
Asia ²	2,376	2,162	1,665	1,627
China	613	642	672	524
Japan	93	102	726	804
Palestine	1,291	1,066	70	62
Syria	227	207	47	42
Other Asia	152	145	150	195
America	20,486	17,139	8,095	8,954
Canada	14,070	10,501	1,018	965
Newfoundland	334	312	58	69
Mexico	2,502	2,640	3,667	5,117
West Indies	2,110	2,231	1,919	1,453
Central America	582	530	453	425
South America	885	915	980	922
Other America	3	10	....	3
Africa	174	218	97	101
Australia	179	159	88	66
New Zealand	49	54	39	21
Philippine Islands	116	119	2,020	2,090
Pacific Islands	20	9	21	20

¹ Includes both quota and nonquota immigrants.

² Immigrants admitted from the "barred zone" of Asia are mainly of the white race.

Table II shows the number of admissions under the Quota Law of 1924. The figures for admissions include many aliens to whom visas were issued during the latter part of the preceding year (since visas are valid for admission within four months of the date of issue). These visas were charged to the quota for the preceding year. For this reason, the fact that 32,759 immigrants were admitted from Germany during the fiscal year 1939 does not mean that German quota was over-issued. The quota was almost entirely filled in the first ten months of the year and the excess of admissions represented persons whose visas had been issued the year before. The number of aliens debarred at ports of entry during 1939 was 6498; about half of them were without valid consular visa and 1832 were considered likely to become public charges if admitted.

TABLE II—ANNUAL QUOTAS ALLOTTED UNDER 1924 ACT, AND QUOTA IMMIGRANTS ADMITTED, FISCAL YEARS 1938 AND 1939, BY COUNTRIES OR REGION OF BIRTH AND SEX

Nationality or country of birth	Annual quota	Quota immigrants admitted in—	
		1938	1939
All countries	153,774	42,494	62,402
Albania	100	106	97
Belgium	1,304	278	307
Bulgaria	100	106	105
Czechoslovakia	2,874	2,853	2,716
Danzig, Free City of	100	89	177
Denmark	1,181	323	282
Estonia	116	40	107
Finland	569	496	461
France	3,086	720	817
Germany			
Austria	27,370	17,868	32,759
Great Britain and Northern Ire- land			
England		1,698	2,096
Northern Ireland	65,721	238	154
Scotland		634	506
Wales		66	72
Greece	307	351	381
Hungary	869	962	1,087
Ireland (Eire)	17,853	1,100	1,418
Italy	5,802	3,428	4,155
Latvia	236	154	223
Lithuania	386	397	365
Luxembourg	100	18	24
Netherlands	3,153	331	617
Norway	2,177	518	465
Poland	6,524	4,218	6,512
Portugal	440	323	404
Rumania	377	407	499
Soviet Union	2,712	917	1,727
Spain	252	264	253
Sweden	3,314	364	324
Switzerland	1,707	427	605
Yugoslavia	845	852	850
Other Europe	500 *	271	193
Asia	1,649 *	823	835
American Colonies	(*)	516	419
Other quota regions	1,850 *	338	370
Sex { Male		20,913	31,699
Female		21,581	30,703

* Quota for colonies, dependencies, or protectorates included with allotment for the European countries to which they belong.

Repatriations and Deportations. Section 23 of the Act of 1917 provides that indigent aliens may be removed to their native land at Government expense, thereby becoming ineligible for readmission except upon the approval of the Secretaries of State and of Labor. Under this provision, 2419 aliens filed applications to be removed during the fiscal year 1939; 1941 received approval and 1825 left the country before the end of the year.

During the year, 8202 aliens were deported, while 9590 deportable aliens were allowed to depart at their own expense, making a total of 17,792 forced departures, as compared with 18,553 in the previous fiscal year. The largest number of these, 4415, were deported to Mexico, the other leading countries of destination being Canada, 1915, Italy, 320, Great Britain and Northern Ireland, 228, and Germany, 172.

Special Cases. The *Strecker* case (see previous YEAR BOOKS) reached the Supreme Court, which ruled on April 17 that past membership in the Communist party is not grounds for deportation. See the separate article on the *BRIDGES* CASE.

The case of John Strachey remained unsettled in view of the fact that the British author decided to sail for home early in the year without awaiting the final decision of the court. Strachey, arriving in the United States for a lecture tour in October of 1938, found that his visa had been cancelled two days after he sailed from England because of his alleged membership in the Communist party. He was detained at Ellis Island and subse-

quently admitted to the country on bond but not permitted to lecture. The Circuit Court of Appeals ruled that he had not received a fair hearing by the immigration officials and that the American consulate had no power to cancel his visa after it had been issued. His case was still subject to appeal by the Labor Department when he decided not to await the final outcome.

Naturalization. Naturalization courts admitted 188,813 aliens to citizenship during the fiscal year 1939, as compared with 162,078 in 1938. Declarations of intention were filed by 155,691 aliens (150,673 in 1938) and petitions were filed by 213,413 (175,413 in 1938). These figures indicate a considerable advance in the number of persons seeking United States citizenship. Factors in the increase were the action of Congress in excluding aliens from WPA employment, the exclusion of aliens from old-age benefits in some States, and the advantage of American citizenship in protecting property rights in Europe. The resulting decrease in the alien population was considerable: 3,628,103 (estimated) in 1939 as compared with 6,234,613 at the census of 1930.

Legislation. Aside from the elimination of aliens from the WPA (enacted in the Work Relief Act), a number of proposals affecting aliens were put forward in Congress during 1939, some of a drastic nature. They included proposals to reduce immigration to 10 per cent of its present level, to require registration of all aliens, to deport aliens on relief, inimical to public interest, or advocating change in the government. The American Committee for Protection of the Foreign Born estimated that there were more than 70 so-called anti-alien bills pending in the 76th Congress at the end of the year. The Committee particularly decried the proposed registration of noncitizens as a step toward regimentation of the entire population and a threat to democratic government.

A Pennsylvania State law requiring the registration of aliens was enacted in 1939. This act was of particular interest because it was one of the first of its kind and because it was invalidated by the Federal District Court less than 24 hours before its effective date. The law required aliens 18 years of age or over (with certain exceptions), residing in Pennsylvania, to register annually with the State department of labor and industry. The person registered was to pay a fee of one dollar and to receive an identification card which he was required to carry at all times. The Federal Court, in declaring the law unconstitutional, held that it was enacted in "a field reserved for the Federal Government."

See PUBLIC HEALTH SERVICE.

IMPORT QUOTAS. See CUSTOMS SERVICE.
IMPORTS AND EXPORTS. **United States.** Exports from the United States attained a higher total for 1939 than for 1938. The excess was less than \$83,000,000. The last four months' exports of 1939 exceeded the corresponding months of 1938 by about \$236,000,000. They not only overcame a prevailing shrinkage of exports through the first eight months of 1939, as compared with corresponding months of 1938, but lifted the year's total exportation (1939) above that of the year before. The main cause of this rise in exports was generally recognized as foreign purchasing stimulated by the European war.

The accompanying table shows both years' totals of exports and imports. It makes plain what happened to trade month by month. With regard to the movement of gold as means to meet the foreign

payments for high additional exports, to start with September, the table indicates that transfers of gold to the United States ran at their highest in September and October, 1938, and in April, 1939, and did not thereafter again attain \$500,000,000 in any month. In the last four months of 1939, the months of a major war in Europe, less gold came into the United States than in either of the year's two preceding periods of four months; less, also, than in the two months, September and October, of 1938. From these comparisons it would appear that the recent transfers of gold to the United States responded more to the prudential motive than to the immediate need to pay for the purchase of excess of exports from the United States, over imports thereto. See FINANCIAL REVIEW under *International Capital Movements*.

The year 1939's U.S. exports of goods, it will be noted, exceeded imports by somewhat over \$859,000,000, an excess less than that for 1938. In 1939, the last four months, the period of war in Europe, accounted for nearly \$402,000,000 of all the year's excess of exports, or somewhat less than one half thereof.

U. S. FOREIGN TRADE, BY MONTHS

[In thousands of dollars]

	<i>Exports and Re-exports</i>		<i>General Imports</i>	
	<i>1938</i>	<i>1939</i>	<i>1938</i>	<i>1939</i>
January	289,071	212,911	170,689	178,246
February	261,935	218,649	162,951	158,072
March	275,308	267,781	173,372	190,481
April	274,472	230,974	159,827	186,296
May	257,276	249,466	148,248	202,493
June	232,726	236,064	145,869	178,922
July	227,535	229,631	140,809	168,925
August	230,790	250,848	165,516	175,614
September	246,335	288,639	167,592	181,519
October	277,668	331,980	178,024	215,289
November	252,381	292,583	176,187	235,500
December	268,943	367,819	171,347	246,903
Twelve months ..	3,094,440	3,177,344	1,960,428	2,318,258

	<i>Gold Exports</i>		<i>Gold Imports</i>	
	<i>1938</i>	<i>1939</i>	<i>1938</i>	<i>1939</i>
January	5,067	81	7,155	156,427
February	174	15	8,211	223,296
March	20	53	52,947	365,436
April	145	231	71,236	606,027
May	212	36	52,987	429,440
June	131	19	55,438	240,450
July	65	9	63,880	278,645
August	17	13	165,990	259,934
September	11	15	520,907	326,089
October	16	15	562,382	69,740
November	14	10	177,782	167,991
December	16	11	240,542	451,183
Twelve months ..	5,889	508	1,979,458	3,574,659

As appears from an accompanying table of yearly exports and imports according to the nature of the commodities, by no means all of the chief groups of these were exported from the United States in 1939 in amounts as high as in 1938. Agricultural merchandise as a whole fell considerably short of its total for 1938. Exports of grain and its preparations and those of unmanufactured tobacco were the conspicuous losers. The increased exportation of non-agricultural goods was unevenly distributed. The products of iron and steel mills, chemicals as a whole, and aircraft related goods accounted for more than half of the increase of 1939's total of non-agricultural exports. Much of the year's increase in imports into the United States was to be found in the cases of crude rubber, raw silk, and tin—goods of the class useful in war and somewhat likely not to be easily bought later.

An accompanying table of yearly total exports and imports according to countries shows changes

PRINCIPAL EXPORTS AND IMPORTS

<i>Class and Commodity</i>	<i>Millions of dollars</i>	
<i>EXPORTS</i>	<i>1938</i>	<i>1939</i>
Exports (U. S. mdse.), total	3,057.2	3,123.9
Agricultural, total	827.5	655.6
Cotton, unmanufactured	228.6	243.5
Grains and preparations	223.5	99.5
Tobacco, unmanufactured	155.7	77.4
Fruits and nuts	99.1	83.2
Packing-house products	48.0	54.8
Non-agricultural, total	2,229.6	2,468.3
Machinery	486.3	502.2
Petroleum and products	388.6	383.7
Automobiles, parts and accessories	270.4	253.7
Iron and steel-mill products	184.2	235.5
Chemicals and related products ^a	128.9	164.7
Copper, incl. ore and manufactures	86.8	97.2
Aircraft, parts and accessories	68.2	116.9
Cotton manufactures, yarn, etc.	57.0	68.3
Coal and coke	55.9	66.7
Iron and steel advanced manufactures	43.3	49.8
Sawmill products	37.6	41.2
Rubber and manufactures	27.2	39.4
Paper and manufactures	25.9	31.8
<i>IMPORTS</i>		
Imports for consumption, total	1,949.6	2,276.3
Agricultural, total	955.5	1,117.8
Crude rubber	129.5	178.0
Raw silk	88.8	120.9
Unmanufactured tobacco	36.0	36.9
Hides and skins ^b	29.9	47.1
Wool and mohair, unmanufactured	22.6	49.7
Coffee	137.8	139.6
Cane sugar	130.4	124.6
Fruits and nuts	55.1	58.2
Cocoa or cacao beans	20.1	27.6
Vegetable oils, expressed	58.6	50.9
Oilseeds	34.7	33.2
Packing-house products	30.3	27.9
Grains and preparations	8.0	12.5
Non-agricultural, total	994.1	1,158.5
Paper & mfrs. (mainly newsprint)	113.0	126.8
Paper base stocks	86.4	88.4
Chemicals and related products ^a	78.0	79.5
Whisky and other spirits	49.2	48.3
Furs and manufactures	45.8	55.5
Tin (bars, blocks, pigs)	44.9	70.6
Petroleum and products	39.5	43.5
Copper, incl. ore and manufactures	37.9	44.4
Cotton manufactures, yarn, etc.	34.6	39.6
Fish, including shellfish	28.3	32.4
Burlaps	28.3	28.0
Diamonds	28.3	45.1
Flax, hemp and ramie manufactures	20.5	22.4
Wool manufactures, yarns, etc.	17.8	25.6

^a Includes a few agricultural items. ^b Includes a few non-agricultural items.

in the trend of trade with the 42 leaders in commerce with the United States. The figures for Poland and Danzig cover only as much of 1939 as preceded the extinction of Poland by Germany and Russia. Czecho-Slovakia does not appear as a leader in trade with the United States, for it lost its unity and independence early in 1939, before it could attain any great total of yearly trade. Blockade virtually ended direct trade with Germany at the outset of September. This accounted, in the main, for the year's smaller commerce with the Reich. For conditions that affected trade with individual countries, see TRADE AGREEMENTS. See also CUSTOMS, BUREAU OF.

World Trade. The United Kingdom ranked first among all countries in the value of foreign trade in 1938, with imports and exports totaling \$3,839,600,000 (old gold dollars); the United States held second place with a total of \$2,956,900,000. The United States had the highest total of exports and ranked third in the value of imports, while the United Kingdom was first in imports and second in exports. The values of imports and exports of the leading commercial countries are shown in the table on page 357, based on figures published in the *Statistical Year-Book of the League of Nations*. See the separate countries under *Foreign Trade*.

UNITED STATES: TRADE BY COUNTRIES
(In thousands of dollars)

Country (Calendar Year)	Yearly Exports 1938	Yearly Exports 1939	Yearly Imports 1938	Yearly Imports 1939
Total, all countries	3,094,440	3,177,344	1,960,428	2,318,258
Argentina	86,793	71,114	40,709	61,920
Australia	68,992	61,554	8,700	14,883
Belgium	76,942	64,567	41,694	63,296
Brazil	61,957	80,441	97,933	107,243
Canada	467,767	493,450	260,172	340,066
Ceylon	1,344	1,602	16,349	20,111
Chile	24,603	26,789	28,268	40,226
China	34,719	55,809	47,189	61,700
Colombia	40,862	51,295	49,398	48,983
Cuba	76,331	81,644	105,691	104,930
Denmark	24,814	23,882	3,324	3,794
Egypt	13,317	13,967	4,772	7,024
Finland	11,991	13,442	18,074	20,664
France	133,872	181,825	54,009	62,375
Germany	107,130	47,374	64,550	52,447
Great Britain	520,878	505,227	118,240	149,669
Greece	8,052	6,391	14,873	22,359
Guatemala	6,861	8,574	9,529	10,725
Hong Kong	21,288	18,128	3,367	3,586
India, British	33,441	42,813	58,354	66,409
Italy	58,292	58,864	41,241	39,921
Japan	239,662	231,405	126,762	161,196
Kwantung	17,005	15,546	1,626	1,546
Malay, British	8,855	9,971	112,274	148,965
Mexico	62,016	83,177	49,030	56,319
Netherlands	96,732	96,809	31,448	28,930
Netherlands West Indies	42,767	38,378	20,617	19,725
Netherlands East Indies	27,518	35,470	68,751	92,971
New Zealand	23,461	16,544	6,559	11,214
Norway	22,567	32,103	15,688	21,687
Panama	10,165	12,752	3,352	3,582
Panama Canal Zone	14,242	19,862	569	479
Peru	16,892	19,246	12,813	13,948
Philippines	86,464	100,018	94,244	91,927
Poland & Danzig	24,695	16,001	13,417	11,495
Portugal	10,950	10,003	3,982	6,461
Spain	12,266	26,743	9,157	10,211
Sweden	64,227	96,661	45,105	42,219
Switzerland	10,596	18,609	23,037	30,617
Union of S. Africa	70,066	69,118	15,985	28,721
U.S.S.R.	69,691	56,638	24,034	25,023
Venezuela	52,278	61,952	20,032	23,612

TRADE OF LEADING COUNTRIES, 1938
(Old U. S. Gold Dollars)

Country	Imports	Exports
United Kingdom	\$2,480,600,000	\$1,359,000,000
United States	1,151,500,000	1,805,400,000
Germany	1,296,400,000	1,250,200,000
France	783,100,000	516,900,000
Canada	398,600,000	561,700,000
Japan	443,500,000	446,700,000
Belgium	454,800,000	430,300,000
Netherlands	459,700,000	337,400,000
British India	324,900,000	350,200,000
Italy	345,700,000	322,600,000
Australia	305,000,000	306,000,000
Sweden	307,100,000	273,300,000
Union of South Africa	287,000,000	288,800,000
Argentina	261,600,000	258,600,000

* Excludes trade between Germany and Austria. ^b Excludes trade with possessions. ^c Includes Luxemburg.

INACCESSIBLE ISLAND. See ST. HELENA.

INCINERATION. See GARBAGE AND REFUSE DISPOSAL.

INCOME. See BUSINESS REVIEW; LIVING COSTS AND STANDARDS.

INDIA. A dependency of the British Empire, consisting of British India, or the territories subject to British law, and the Indian States, ruled by native princes but under the indirect control of the British Parliament. Capital, New Delhi. Summer seat of the government (April to October), Simla.

Area and Population. On Apr. 1, 1937, Burma (q.v.) and Aden were separated from India and created Crown Colonies. The total population of British India and the Indian States under British control (excluding Burma) was officially estimated

at 365,700,000 on Nov. 30, 1938. The area and population of the British (governors') provinces and of the Indian States and Agencies at the 1931 census are shown in the accompanying table.

BRITISH PROVINCES AND INDIAN STATES:
AREA AND POPULATION

British Provinces	Area in sq. miles	Population, 1931
Ajmer-Merwara	2,711	560,292
Andamans and Nicobars	3,143	29,463
Assam	67,334	9,247,857
Baluchistan	134,638	868,617
Bengal	82,955	51,087,338
Bihar and Orissa	111,702	42,329,583
Bombay (Presidency)	151,673	26,398,997
Aden	80	51,478
Burma	233,492	14,667,146
Central Provinces and Berar	131,095	17,990,937
Coorg	1,593	163,327
Delhi	573	636,246
Madras	143,870	47,193,602
Northwest Frontier Province	36,356	4,684,364
Punjab	105,020	24,018,639
United Provinces	112,191	49,614,833
Total Provinces	1,318,346	289,491,241
Indian States and Agencies		
Baroda State	8,164	2,443,007
Central India Agency	51,597	6,632,790
Cochin State	1,480	1,205,016
Gwalior State	26,367	3,523,070
Hyderabad State	82,698	14,436,148
Jammu and Kashmir States	84,516	3,646,243
Mysore State	29,326	6,557,302
Punjab States	31,241	4,472,718
Rajputana Agency	129,059	11,225,712
Sikkim	2,818	109,808
Travancore	7,625	5,095,973
Western India Agency	35,442	3,999,250
Total States	490,333	63,346,537
Total Provinces	1,318,346	289,491,241
Total India	1,808,679	352,837,778
India without Burma	1,575,187	338,170,632

NOTE.—Figures for the Provinces include those of the States attached to them except in the case of Madras, where they exclude Cochin and Travancore.

Registered births in the British provinces in 1937 numbered 9,388,457 (34.5 per 1000); deaths, 6,112,375 (22.4 per 1000). Populations of the chief cities at the 1931 census were: Calcutta, with suburbs and Howrah, 1,485,582; Bombay, 1,161,383; Madras, 647,230; Hyderabad, 466,894; Delhi (including Shahdara, New Delhi, and Cantonment), 447,442; Lahore, 429,747; Ahmedabad, 313,789; Bangalore, 306,470; Lucknow, 274,659; Amritsar, 264,840; Karachi, 263,565; Poona, 250,187; Cawnpore, 243,755; Agra, 229,764; Nagpur, 215,165; Benares, 205,315.

Education and Religion. The number of persons able to read and write is about 30,000,000. The number of pupils reported in attendance by 256,152 educational institutions in the academic year 1936-37 was 13,958,695. About one-half of the elementary schools were aided or maintained by the State. Universities numbered 18 in 1936-37; 15 of them were in British India and 3 in Indian States. The 1931 census showed 239,195,140 Hindus; 77,677,545 Moslems; 12,786,806 Buddhists; 8,280,347 followers of tribal cults; 6,296,763 Christians; 4,335,771 Sikhs; 1,252,105 Jains; 109,752 Zoroastrians; and 24,141 Jews.

Production. About 71 per cent of the population is engaged in agriculture or stock-raising. The planted area in the crop year 1936-37 totaled 213,763,258 acres in the British provinces (exclusive of Burma) and some 70,000,000 acres in the native states. The wheat harvest was estimated at 10,086,300 metric tons in 1939 as compared with 10,936,700 metric tons in 1938. The barley crop

was 2,348,100 metric tons in 1937; the production of corn approximates 2,200,000 metric tons a year. The output of rice totaled 35,969,000 metric tons in the 1938-39 season. Other products (in metric tons) were: Rice, 35,969,000 (1938-39); coffee, 17,000 (1937-38); sugar, 2,750,000 (1938-39); tobacco, 510,100 (1938-39); tea, 195,200 (1937); cotton, 929,000 (1938-39).

Mineral production (in metric tons) in 1938 (except when otherwise specified) was: Iron ore, 1,850,000; pig iron, 1,576,000; steel (ingots and castings), 982,000; coal (British provinces only), 25,624,000; salt, 1,878,000 (1937); manganese, 450,000; crude petroleum, 317,000; copper (smelter), 5400; cement, 1,142,000 (1937). Indian mills produced about 1,159,513,000 lb. of cotton yarn in the year ending Mar. 31, 1938. Textiles of jute are an important industry.

Foreign Trade. Merchandise imports in the year ended Mar. 31, 1939, totaled 1,518,000,000 rupees; exports, 1,691,900,000 rupees. In 1937-38, merchandise imports were valued at 1,733,200,000 rupees; exports at 1,892,000,000 rupees.

In the 1939 fiscal year, the principal exports were cotton, raw and manufactured, jute, tea, hides, skins, and leather. Exports were consigned chiefly to the following countries: United Kingdom, 33.75 per cent; Japan, 8.96; United States, 8.51; Burma, 6.16; Germany, 4.66; France, 3.78 per cent. Of the imports, the United Kingdom supplied 30.67 per cent; Burma, 15.86; Japan, 10.13; Germany, 8.49; United States, 6.41. See **IMPORTS AND EXPORTS**.

Finance. For the fiscal year ending Mar. 31, 1940, revenue was estimated at 821,500,000 rupees; expenditures at 826,500,000 rupees. Revised computations showed receipts of 830,000,000 rupees in 1938-39 and expenditures of 856,500,000 rupees. Actual revenue in 1937-38 totaled 857,600,000 rupees; actual expenditures were 865,400,000 rupees. On Jan. 1, 1939, the public debt of the Central Government was 7,148,639,000 rupees, including a floating debt of 2,770,012,000 rupees. It was 7,130,916,000 and 2,757,953,000 rupees respectively on Jan. 1, 1938. Central monetary gold reserves totaled \$162,000,000 (old U.S. gold dollars) on Sept. 30, 1939. The average exchange value of the rupee (in terms of the current American dollar) was \$0.3659 in 1938 and \$0.3328 in 1939.

Transportation. On Mar. 31, 1938, railway mileage totaled 41,076 (29,372 miles of Imperial State lines and 6991 miles of Indian State lines). Railway passengers (1937-38) numbered 521,284,700; freight carried, 87,289,000 tons; gross receipts, 1,075,700,000 rupees. The Indian merchant marine aggregated 247,819 gross tons on June 30, 1938. Highways extended 280,746 miles (of which 73,632 miles were unimproved earth and non-surfaced) in 1939 (see **ROADS AND STREETS**). The principal Indian cities are linked with British, Dutch, and French air lines to the Far East and, via Hong Kong, with the American trans-Pacific service. In August, 1939, there were 9 air routes covering 5247 miles.

Government. India, as defined by Parliament under George V, comprises all parts of the Indian Peninsula under British government or protection. The King of England bears also the title of Emperor of India. In many respects, however, the imperial system of government in India was changed by the British Parliament's act of 1935 known as the Government of India Act. This provides means for establishing gradually a federated India to include the British governors' provinces,

the chief commissioners' provinces, and the acceding native States. Provinces and States in general are to retain local self-government; a central government is to conduct matters of concern to the whole federation.

The plan was partly in force in 1939. The eleven British provinces had their own legislative assemblies and ministries responsible thereto. The Council of India (in Great Britain) no longer operated, and the Governor-General (the Viceroy) was under the Secretary of State for India in London as to matters within the ruler's discretion. The native States had not yet consented to enter the proposed Federation. The Federal Legislature was yet unformed. The Governors of the British provinces retained power of veto over acts of provincial legislatures. The Governor-General in Council still exerted great powers; but he no longer performed under this title the functions of the Crown in regard to the Indian States; he now performed such functions under the title, vested in him, of Crown Representative. The pre-existing Indian Legislature (Governor-General, Council of State having 58 members, partly appointed, and Legislative Assembly of 102 elected and 39 appointed members—in operation since 1921) continued to exert a limited power of legislation. Awaiting the realization of a ministry that would hold office at the projected Legislature's pleasure, the Indian Executive Council was still a body of seven appointed officials responsible to the Governor-General. The Viceroy in 1939 was the Marquess of Linlithgow (assumed office Apr. 18, 1938).

HISTORY

Character of Public Activity. The public activity of 1939 centered until September almost wholly around the efforts to advance and shape the political and social new era promised by the Government of India Act. India became early in September a participant in Great Britain's war against the German Reich. Thereafter events were complicated by the double motivation of India's attitude to the war and to its own political outlook. The year's succession of happenings involved a number of groups, each an agent and some of them mutually opposed. The chief of these agents were the Indian administrative government, the British government, the Congress party, the All-India Moslem League, the group immediately following Mohandas K. Gandhi, the Provincial governments, and the native States and rulers.

The Indian administrative government sought to keep the movement for the enfranchisement of India within the confines of the Government of India Act and the British obligations to the native rulers; also, after the outbreak of war, it endeavored to lend India's military aid to Great Britain and to maintain those Indian groups which could best serve this object—the native rulers and the Mohammedans. The British government was prevailingly of a mind with the Indian administration but was harassed by an active minority in Parliament, which pressed the cause of the Indian nationalists. The Congress Party, though divided within itself between liberals and conservatives, acted together in pressing for the advancement of the program of federation; it sought to make the advent of war useful for gaining further definite pledges from the British authority. Gandhi and his following opposed the ultra-liberal tendency of a great part of the Congress party but took the lead in that party's efforts on behalf of Indian self-government. The Mohammedans and the native princes (a great

many of them Moslems) held out against pressure on them to enter the proposed federation; after the outbreak of war they became energetically helpful to the British cause, by reason, in many cases, of their aptitude for war, and thereby won the favor of the British authorities.

Pressure on Native Rulers. The purpose of the Hindu partisans of federation was to bring into a federated and democratized India some 500 native States, most of them of little extent or power, but for the most part having princes who clung tenaciously to their own advantage, to the old ways, and to their rights as assured by Great Britain long ago. One of the less important of these states, Rajkot, was the realm of a prince named Thakor Sahib. He had given what the nationalists regarded as a promise to institute an advisory council. Gandhi, as spokesman for that group, charged that Thakor had not lived up to the promise.

When Thakor would not implement the undertaking with definite means of establishing the council, Gandhi, early in March, undertook a fast, to end only when Thakor should submit. Less than a year under the age of 70 and frail of body, Gandhi was regarded with veneration by a great part of India's huge population. The Viceroy, facing the prospect that the Congress party's ministries in the eleven British provinces would resign if the fast continued, speedily exerted himself to bring Thakor to compliance. A compromise was arranged: the question of the disputed reform and of the alleged promise was referred for determination to Chief Justice Sir Maurice Gower. Gandhi accepted this arrangement and ended his fast on March 7, his fifth day without food.

Defeat of the Leftists. Among the most energetic leaders in the Congress party were several individuals strongly indoctrinated with ideas far more liberal than the classical system of representative democracy would accept. One of these men, Subhas Chandra Bose, president of the party, was re-elected to that position in January, against the opposition of Gandhi and a considerable moderate wing. At this time the native princes were in some danger from mobs instigated by extremists on behalf of reforms. Major R. L. Bazalgette, British political agent at Orissa, had been killed a fortnight before by such a mob, advancing on the palace of the Raja of Ranpur. On April 29, however, the moderates in the Congress party brought about the resignation of Bose and elected Rajendra Prasad party president in his place. Bose was later excluded from membership in party committees and formed a leftist group of his own within the party. The Congress party in 1939, though controlling many millions of adherents, was comparatively compact, reportedly numbering only about 4,000,000 members.

Princes Averse to Federation. The Indian Chamber of Princes met, March 13-14, at Delhi, heard proposals for federation in an address by the Viceroy, and expressed its attitude to these proposals. The Viceroy admonished the princes that their interest and duty alike required them to remedy legitimate grievances of their subjects and urged the need of their meeting the latter's legitimate aspirations as well. Popular aspirations signified above all, at this time, the inclusion of the native States in the projected federal bond. The question of redressing grievances of the subjects in these States was intimately connected with the question of federation, for concessions leading toward popular government tended to put into the

people's hands the power to convert the States into simple elements of a united India.

The princes' reply to the Viceroy conceded their duty to effect administrative improvements but declared constitutional changes to be their own particular concern and held against consenting to federation before determination of possible resulting damage to their own rights. There followed a statement from the British authorities outlining to the princes a basis on which they were expected to find it reasonable to accept federation; this statement was not published. Many of the native rulers, conferring in Bombay about the middle of June, rejected the outlined terms of this statement as "fundamentally unsatisfactory" and likely to damage rights that they held from Great Britain by treaty. A recommendation from Gandhi, June 4, that the Congress party use more conciliatory ways of dealing with the princes had failed to win them. About 50 of them on June 12 definitely rejected federation under the new British proposals; as the great majority of the native rulers had small realms, the number of the rejections signified less than the possible number of the subjects affected by them.

With regard to reforms within principalities some princes made substantial concessions in 1939. The Nizam of Hyderabad issued in July a plan of government calling for a unicameral Legislature composed of elected members to the extent of almost one-half and granted the right to hold political meetings without special authorization; the executive power to reverse the Legislature was, however, retained. The Maharaja of Baroda, in February assented to a bigger Assembly, the majority of its members holding by election; one member, acceptable to the Assembly, was added to the State's executive council.

Postponement of Federation. Shortly after the 50 princes' rejection of federation in June the Viceroy issued a decree prolonging the operation of the old Central Legislature for another year; this indicated the abandonment of hope for an early establishment of the Legislature provided by the British Act of 1935. The Congress party rejoined by boycotting the Legislature's ensuing session. A new declaration from the Viceroy on September 11, just after the start of the war with Germany, suspended until after the war all further steps toward federation. This move placated the Moslems and diminished the likelihood of the recurrent religious riots between Moslems and Hindus, often sanguinary affrays and generally harmful to the cause of a united India.

India Enters the War. After the British government's declaration of war with Germany on September 3 the government of India promptly and without awaiting the co-operative action of the Indian parties decided to range the Empire on the side of Great Britain. It had the support of widespread native sentiment against Germany: Gandhi expressed his sympathy with the British and French cause on September 5. M. B. Roy, a leftist leader in the Congress party, expressed similar sentiments, September 8. Sir Sikander Hyat-Khan, Premier of the Punjab, had previously, late in August, declared that province, the native ground of about three-fifths of India's indigenous troops, ready to back Great Britain. The Maharaja of Bikaner and the Aga Khan both offered their own services and contributions of money or of military units. The chief Indian princes followed suit with voluntary contributions. Troops were soon dispatched out of India, both

to other Asiatic areas and to the European front, where a contingent arrived late in December.

Congress Party Seeks New Gain. Gandhi made of the outbreak of war an occasion to seek from the British authorities further and more ample commitments as to self-government for India. In taking this course he drew the condemnation of the Marquess of Zetland in the British Parliament, as pressing Great Britain when she was locked in a life-and-death struggle. It was pointed out on Gandhi's behalf that the government had put India into a war without consulting the spokesmen for the people of the country and that troops had been sent out without effort to get the consent of the Legislature in conformity with an alleged British pledge of 1935.

Late in September Gandhi held conferences with the Viceroy, to obtain a fuller exposition of the aims with which the British government had gone to war. On these conferences Gandhi reported, October 2, to a committee of the Congress party, authorized to decide on the party's co-operation in the war. The committee, in turn, voted a resolution asking for the British aims and for assurance of action on Indian self-rule. The Viceroy replied, October 18, that at the end of the war the British government would be ready to consult with representatives of India on any necessary modifications of the Act of 1935—in other words, apparently, to call another Round-Table conference; it was too early, the Viceroy intimated, to state the British aims in the war.

This response disappointed the Congress party, first because they wanted assurance that the British were fighting against Nazism and for Democracy—this position would have been helpful to their own demand for self-government; secondly, because of the possibility that the proposed revision of the Act of 1935 might work in favor of the native princes, now engaged in displaying the best feudal virtues as staunch military upholders of the overlord.

The rejoinder to the Viceroy soon came. It took the form of identical demands, moved in the several Provincial Legislatures, that the British regime regard India as an independent nation entitled to write a constitution of its own, and that it give early assurance to this effect. The first of these resolutions was moved in the Province of Bihar, October 16. On the 22nd the Congress party bade the ministers in all the Provinces to resign in protest against the unsatisfactory attitude of the central authority, which had not given the desired assurances. In a short time eight Provinces' ministries had resigned, and representative government in these eight went into abeyance, succeeded inevitably by authoritarian rule. This development was felt as a blow in Great Britain. It received considerable discussion in Parliament, some Conservatives taking a tone of uncertainty as to the outlook for India's enfranchisement, while Wedgwood Benn, Laborite, espoused the Indian position, thus tending to make the subject once more a partisan issue. In the closing weeks of the year the Indian Nationalists were making ready for the possible new employment of the tactics of passive resistance and for other sorts of demonstration. Plans of the Viceroy for creating a consultative council of representatives of all the Indian groups, to help use India's energies in prosecuting the war, received a setback. The Moslem League, however, rejoiced, observing December 22 as a day of thanksgiving for the cessation of the Congress party's government in the Provinces.

See **CHEMISTRY, INDUSTRIAL; MILITARY PROGRESS; EARTHQUAKES.**

INDIA, PORTUGUESE. See **PORTUGUESE INDIA.**

INDIANA. Area and Population. Area, 36,354 square miles, exclusive of State's part of Lake Michigan, but including (1930) other water, 309 square miles. Population: Apr. 1, 1930 (census), 3,238,503; July 1, 1937 (Federal estimate), 3,474,000; 1920 (census), 2,930,390. Indianapolis, the capital, had (1930) 364,161; Fort Wayne, 114,946; Evansville, 102,249; South Bend, 104,193; Gary, 100,426.

Agriculture. Indiana's farmers harvested 9,845,800 acres of principal crops in 1939. About two-thirds were in grains and hay, but these were yielding some of their acreage gradually to soybeans. Corn, by far the leading crop, raised on 4,144,000 acres, made 213,416,000 bushels (estimated farm value, \$106,708,000); wheat, on 1,534,000 acres, 27,612,000 bushels (\$19,605,000); tame hay, 1,969,000 acres, 2,723,000 tons (\$18,244,000); oats, 1,009,000 acres, 25,225,000 bushels (\$7,315,000); potatoes, 48,000 acres, 4,560,000 bushels (\$3,876,000); soybeans, 716,000 acres, 13,962,000 bushels (\$10,472,000).

Manufacturing. Indiana's 3939 establishments engaged in manufacturing in 1937 (in 1935, 3917) employed 313,342 wage earners (in 1935, 248,196) and paid them during the year wages totaling \$402,116,998 (in 1935, \$257,802,311). They turned out products to the value of \$2,497,547,946 (in 1935, \$1,649,530,092); of this, the greater part, \$1,478,675,753 (in 1935, \$946,283,850) represented the cost of materials, etc., and the remainder, \$1,018,980,193 was contributed by manufacture (in 1935, \$703,246,242). The foremost group in the manufacturing industry, steel works and rolling mills, included in 1937 only 18 establishments, but employed 43,400, nearly 14 per cent of the manufacturing wage earners, and produced goods to the total of \$356,646,436; it paid, for the year, wages of \$76,237,096. It used a great part of the product of the blast furnaces, which product totaled \$60,099,508. Another leading branch of manufacture, the making of motor vehicles, parts, and bodies, carried on in 67 establishments, by 32,560 wage earners, produced parts and bodies to the value of \$131,260,240 and, in part using these as material, put out motor vehicles to the value of \$188,593,660. The output of the 6 refineries of petroleum had the value of \$190,332,763, but of this total less than \$50,000,000 was contributed by the manufacturing done at the refineries. Electrical machinery, apparatus, and supplies were produced to the value of \$113,230,341, of which the manufacturers contributed the greater part, \$57,905,713. Glass-making, which attained a production of \$38,558,514, was a specialty (as to certain sorts) shared mainly with Ohio.

The manufactures of Indianapolis, for 1937, amounted to \$284,925,868, in value of products. East Chicago, producing \$304,323,701, was somewhat higher as to this total, but was surpassed by Indianapolis in the total of value contributed by manufacture (Indianapolis, \$137,255,191; East Chicago, \$114,289,999). Evansville's manufactures in 1937 aggregated \$188,308,542; South Bend's, \$134,772,551.

Mineral Production. The value of the native minerals produced yearly in Indiana totaled, for 1937, \$54,886,756. Coal, cement, stone, and clay products were this total's chief components; coal alone furnished over half of it. The mines' output of bituminous coal dropped by about 21 per cent

to some 14,050,000 net tons, for 1938, from 17,765,000 tons for 1937, for which year the value of the output attained \$28,601,000. The producers' sales and direct use of stone, totaling 3,782,410 short tons for 1939, exceeded slightly the total for 1937, of 3,504,530 tons; by value the totals were \$6,486,996 (1938) and \$6,397,891 (1937). About half of the value of the output of stone, or \$3,231,421, for 1938 represented oolitic limestone, mainly for fine building; much of this was in the form of cut and sawed pieces of specified dimensions, sold at an average price well in excess of \$1 a cu. ft., to a total of \$2,605,983. The State's clay products, other than pottery and refractories, attained for 1937 a total of \$4,670,619.

The State's industry in the working of minerals obtained from outside, an activity largely distinct from the production of its native minerals, included the making of coke, pig iron, and open-hearth steel. Byproduct ovens, producing Indiana's coke, used as their raw material in 1937 7,784,418 tons of coal, almost all from Kentucky and West Virginia. There were produced, in 1938, 2,894,548 net tons of coke; but for 1937 the production, much higher, totaled 5,467,061 tons and had a value of \$32,655,355. The production of pig iron, much reduced in 1938, approximated shipments from blast furnaces, which declined to 1,807,808 gross tons (1938), from 3,694,360 (1937); by value, they dropped to \$37,025,980, from \$77,990,597. There were made in the State 3,435,360 gross tons of open-hearth steel ingots and castings in 1938, as against 5,947,368 tons in 1937.

Education. For the year 1938-39 the enrollments of pupils in all Indiana's public schools numbered 678,858; this comprised 473,665 in the elementary group, 190,612 in high schools and 14,581 otherwise listed. The year's expenditure for public-school education totaled \$50,675,798. More than half of this total was required for the year's salaries of 23,168 teachers; the average of these salaries was \$1260.71.

Legislation. The General Assembly convened in regular biennial session January 5 and adjourned March 7. The Democratic administration of the State and the Republican group controlling the lower house failed to unite on any broad plan of legislation. The enacted budgetary appropriations totaled somewhat over \$84,000,000 for the two years ahead, as against \$78,689,284 voted by the previous Legislature.

The session voted the State's ratification of Ohio Valley Sanitation Compact, an agreement of eight States for checking the pollution of the flowing waters of the Ohio River's basin. The State's so-called monopoly, whereby the right to import beer from outside the State's bounds was in effect restricted to 13 firms, came to an end by reason of an act extending the right of importation to the licensed wholesalers of beer in general. Other enactments exempted municipally owned public-utility enterprises from taxes on property; set up a traffic code including formulae for determining drivers' intoxication, for courts' purposes, by percentages of alcohol in the blood; and requiring that applicants for marriage licenses submit, as lately decreed in divers other States, to medical tests for detecting venereal disease. Measures that failed of passage included provisions for reducing the burden of the State's gross-income tax on retail merchants; for diverting to the cities and counties half of the proceeds of the State's tax on gasoline; and for extending the power of the

direct primary to cover the selection of candidates for Governor and U.S. Senator.

Political and Other Events. Small merchants took the occasion of the legislative session to conduct in some localities a campaign for the repeal or modification of the State's tax on gross income, designated by one spokesman as a club to beat the little business man to death. In South Bend, where numerous merchants had concerted to refuse payment of the tax, the State authorities took out over 100 warrants late in March for seizing non-payers' property; later, the State tried proceedings to put defendants in receivership. The tax law that the merchants hoped to bring the Legislature to repeal was part of the body of modernized tax laws given to the State in the days of Governor McNutt; it levied 1 per cent on the gross income of individuals and firms, was described as the first law of its kind in the current practise of the United States, and had made itself needful to State administrations by bringing in a substantial revenue year after year.

The State Supreme Court granted in May, to Edward Dircks, grocer, of Indianapolis, an injunction against the picketing of his shop, on the ground that the statements on pickets' placards were calculated to give a false impression; the rule was established that strikers' pickets might not while picketing display such statements. The U.S. Senate's committee on elections dismissed a petition submitted by Raymond E. Willis, Republican candidate in 1938 for the Senate, who sought to contest the re-election of Frederick Van Nuys, Dem., as Senator from Indiana. Six citizens of Kokomo, former Mayor Holt included, were found guilty in a Federal trial in May, of having conspired to divert WPA labor to private enterprises.

The State's act restricting to a few firms the importation of beer into Indiana went out of force March 31. Upon the law's repeal, Illinois, Ohio, and Michigan terminated their orders excluding Indiana's beer from their respective territories by way of reprisal. The formerly favored importers and a group of about 150 wholesalers of beer contested the admittance of others to their numbers under the terms of the new law. Recourse to the Marion County Superior Court brought a decision that the new code of regulation of liquor allowed the Alcoholic Beverage Commission to refuse permits for wholesaling beer, on the economic ground that applicants' intended territory had too little business to give more wholesalers a living. This decision, in turn, was overthrown by the State Supreme Court, which held in June that the Commission could not refuse on such economic grounds the granting of a license.

The State government had still the help of some of the \$27,000,000 left by Governor McNutt as surplus cash at the termination of his time in office. The unused money, however, was becoming steadily less, and the budgetary provisions for the new biennium were expected to reduce the remainder to less than a million dollars. The cost of poor-relief, particularly in Indianapolis and neighboring towns, compelled the levying of high local taxes, of which a great part went toward the service of debt incurred for this purpose in the course of the previous several years. In Lawrence and Martin counties a projected Federal enterprise of damming the eastern fork of the White River to make a reservoir 90 miles long covering 58,000 acres, for holding back floods, met

with local opposition among owners of fertile farms likely to be condemned.

Officers. Indiana's chief officers, serving in 1939, were: Governor, M. Clifford Townsend (Dem.); Lieutenant-Governor, Henry F. Schricker; Secretary of State, James M. Tucker; Auditor, Frank G. Thompson; Treasurer, Joseph M. Robertson; Attorney-General, Omer Stokes Jackson; Superintendent of Public Instruction, Floyd I. McMurray.

INDIAN AFFAIRS, OFFICE OF. Subject to exceptions (Alaska, Eastern Oklahoma, certain Eastern States, and Indians not on reservations), the Federal government exercises exclusive jurisdiction over Indians. It renders special services to all save a few groups east of the Mississippi. On Jan. 1, 1939, the Indians numbered 351,878, including 29,983 Indians and Eskimos in Alaska. Certain full-blood tribes have increased at rates up to nearly 2 per cent a year. The aboriginal population of the territory now the United States and Alaska has been estimated by authorities as between 800,000 and 900,000.

The present system and program of Indian administration are best comprehended in the light of history. From the beginning, Congress and its instrumentalities asserted exclusive jurisdiction over the tribes. Until 1868, Indians were treated as sovereign and yet dependent nations, in treaty relationship with the United States. Treaties were lavishly negotiated, ratified with solemnity, and usually broken by the government. The direct and indirect cost of the resultant Indian wars was huge. And valid claims against the government, based on breaches of contract, were rolled up in amounts of hundreds of millions or billions of dollars. (Most of the claims are yet unsettled, and their total is unknown.)

After 1868, Congress ruled the Indians through its plenary authority. Administration was transferred (in 1849) from the Department of War to the Department of Interior. Commencing in the eighties, policy was searchingly directed toward sundering the tribal and communal, even the family, bonds of Indians, effacing the languages and customs, including the arts and crafts, and compelling an individual as distinct from a tribal ownership of land. Indian land ownership shrank from nearly 156 million acres of mostly good land in 1881, to 47 million acres of mostly poor land in 1933. Extreme poverty deepened with the years. The minority of tribes still owning their lands collectively, also were the tribes using their lands and accomplishing more or less of self-support.

Policy was redirected through the Indian Reorganization Act of June 18, 1934 (Stat. 48-984), and collateral enactments. The new policy stops land losses to whites, and furnishes new lands to subsistence-seeking tribes. It encourages and assists tribal organization and community organization. It stresses day schools, serving young and old alike, in place of distant boarding schools, the residual boarding schools being specialized for elder age groups and for types of future occupation. Professional and advanced education for Indians is facilitated through non-interest-bearing educational loans. A modern, though as yet inadequate, agricultural credit system has been set up. Indians, by statute, are given preference for Indian Service employment, within a competitive Civil Service for Indians alone which as yet is incompletely developed.

Fundamental is the changed policy toward In-

dian organization. Tribes are organized for domestic self-government and are chartered for industrial operations. Even the applicability of the Reorganization Act was made subject to tribal acceptance, and Indians numbering 86,365 (77 tribes) elected, for the present, not to live under the Act. One hundred and thirteen tribes (including those in Alaska) numbering 115,092 members, have organized under tribal constitutions, to date, and 82 tribes, numbering 74,882 members, have adopted industrial charters under the Act.

Through the Indian Arts and Crafts Board, created by statute within the Indian Service, native arts are being protected and aggrandized. Through co-operative arrangements with the Department of Agriculture, through the Indian branch of CCC, and through the tribal organizations, the conservation of natural resources, particularly soil and water, is being pressed in all Indian areas. Other activities of the Service include field medical and nursing and hospital operations, forestry, agricultural extension, comprehensive trusteeship operations, co-operation with the tribes in maintenance of law and order, and planning at the physical, the human, and the administrative levels. Indians in most States receive social security benefits. Under the Johnson-O'Malley Act (Stat. 48-596) of Apr. 16, 1934, as amended June 4, 1936 (Stat. 49-1458), States, their political subdivisions, and privately supported institutions, are through contract brought into the service of Indians.

JOHN COLLIER.

INDIANA UNIVERSITY. A coeducational State institution of higher learning in Bloomington, Ind., founded in 1820. For the first semester of the academic year 1939-40 the registration aggregated 6431 students (4239 men and 2192 women). The registration for the summer session totaled 2051 (1051 men and 1000 women). The faculty had 446 members, an increase of 10 over 1938-39. The endowment funds amounted to \$2,404,167, and the total income for the year, from State and private sources was \$7,429,185. A \$3,500,000 building program, now nearing completion, will add to the physical plant the following buildings: Auditorium, Business Administration Building, Physical Science Building, Two Dormitories for Men, Two Dormitories for Women, and the Extension Center Building at East Chicago for the Calumet District. The main library contained 324,498 volumes. President: Herman B. Wells, B.S., A.M.

INDIANS. See INDIAN AFFAIRS, OFFICE OF.

INDO-CHINA. The southeastern peninsula of Asia, consisting of BURMA, FEDERATED MALAY STATES, FRENCH INDO-CHINA, SIAM, STRAITS SETTLEMENTS, and the UNFEDERATED MALAY STATES. See articles on each state.

INDUSTRY. See BUSINESS REVIEW.

INFANT MORTALITY. See CHILDREN'S BUREAU.

INFANTRY. See MILITARY PROGRESS.

INFLATION. See CUBA, GERMANY, MANCHOUKUO, PARAGUAY, SPAIN under *History*.

ININI, TERRITORY OF. See FRENCH GUIANA AND ININI.

INLAND WATERWAYS CORPORATION. See COMMERCE, U.S. DEPARTMENT OF.

INNER MONGOLIA. See CHINA; MONGOLIA.

INORGANIC COMPOUNDS. See CHEMISTRY.

INSECTS. See ENTOMOLOGY, ECONOMIC; ZOOLOGY; BIOLOGICAL SURVEY.

INSURANCE. Interest of the insurance fraternity of the country during 1939 centered largely about the investigation of life companies by a Congressional committee, which, inaugurated in 1937, was continued from time to time through the succeeding 12 months, and apparently is still far from being concluded, as sessions have been planned for various dates during the early months of 1940.

While the study of the committee thus far has been devoted in the main to a probing of the investment practices of the life companies, the impression generally held by close observers of developments is that the investigation is preliminary to a move by the Federal government to assume greater authority over the insurance industry than it now has—a result that would be highly displeasing to the underwriting fraternity, whether office or field employees. The possibility of Federal jurisdiction in such connection was warmly discussed, not alone at conventions of insurance workers but by the commissioners of insurance of the different states, all of whom are stoutly opposed to any extension of control by the Government over the business. Underwriters maintain that such development would add to rather than remove legislative requirements to which they are now subjected; for obviously the states would not surrender any of their constitutional rights, and any regulations the Federal authority might impose, should Congress grant it the right so to do, would merely be in addition to those of the states to which companies are already subjected.

The United States Supreme Court, in the famous case of *Paul vs. Virginia* reviewed in 1869, held insurance was not commerce, and hence was not under control of the National Government. Whenever the suggestion of Federal jurisdiction was proposed, as has been true from time to time in past years, that decision proved an effective answer. Whether a like opinion would be given by the Supreme Court today, were the same issue presented, is regarded as doubtful.

In spite of a number of hampering influences affecting the insurance industry during 1939, however, the business on the whole fared pretty well. Little gain in premiums from any of the major divisions of the business was anticipated, though exact figures were not available at the close of the year. By and large an underwriting profit was earned, while values of securities carried by companies in their portfolios were about what they were at the beginning of the year. Nor was there any material change in the type of security holdings, though virtually all classes of carriers increased their Federal bond investments. British fire and casualty companies continued their long established practice of favoring bonds rather than stocks. Bank deposits too were increased—of necessity rather than desire, for managements awaited opportunity to make security purchases upon more advantageous terms and anticipated such occasion would offer in the near future.

The European war, so upsetting to many lines of general business, exercised little direct effect upon the insurance fraternity up to the close of the year. Upon the outbreak of hostilities insurance carriers of all classes adopted such programs as, it was felt, would deal with the initial situation. Some life offices adopted a clause in new policy issues denying liability in the event of

death caused through war activity. Accident and health writing companies made no material changes in their contracts, feeling that the provisions now governing were ample to cover contingencies. Fire companies, however, issued new types of coverage, providing for loss through bombing, malicious mischief in manufacturing plants, and for other special hazards incident to the uncertainties existing in a war period. Marine writing companies were directly affected, of course, and, profiting by the experience gained in the World War, adopted measures which thus far have proven satisfactory alike to shippers and insurers.

Another marked feature of the year was the increased appreciation shown by underwriters of the value of publicity regarding the nature and conduct of their business. The National Board substantially increased the activity and scope of its publicity department. Its representatives spoke before college and high school assemblies in all parts of the country, as well as before chambers of commerce and kindred commercial bodies; they advocated reduction in the fire waste, and advised how this may be done through the adopting of proper building construction and fire protection methods. Similarly, both the National Bureau of Casualty and Surety Underwriters and the Surety Association of America conducted aggressive publicity campaigns; the former stressing particularly the means for reducing accident hazards, and the latter pointing out safeguards against defaults on the part of trusted employees.

Many universities of the land now recognize the importance of the insurance industry and the opportunities it affords for trained men and have instituted insurance courses under qualified instructors. The Insurance Institute of America and the Insurance Society of New York, both in existence for a number of years, broadened their respective instruction courses in 1939. Each had a large student body, mainly young people already employed in the business but anxious to equip themselves for advanced posts—an ambition given every encouragement by their employers. Various state agents' associations too arranged for instruction courses for their respective members and their employees, and this practice promises to extend in future.

The credit men of the country have been exceptionally concerned in insurance affairs within the past twelve months, the subject appearing upon the agenda of the National and of a number of state credit men's associations. In conjunction with underwriters, the credit men prepared a form of inquiry to all seekers of credit, requiring not only a record of the amount of fire insurance carried, but the forms and character of other insurance held by their clients as well. It is obviously desirable that a house extending credit should know the amount of indemnity that a customer might receive in the event of fire or other misfortune.

Few new laws adversely affecting insurance industry were enacted in 1939, through a number of bills, introduced in certain state legislatures, would have been decidedly troublesome had they passed. The great legislative uncertainty through the twelve months was over those measures that Congress might enact as a result of the investigation of insurance affairs by its special committee. But not in many years had so many policy forms, on all divisions of the business, been altered as in 1939—changes usually effected by

broadening the contract conditions without any increase in the rates. Managing underwriters studied the needs of the business world as never before and arranged forms of indemnity to safeguard them adequately, appreciating that only by following a forward program could insurance hope to continue the confidence of the general business world it had long enjoyed.

Marine Insurance. Chief activity in underwriting circles was naturally in the marine line, for the outbreak of war in Europe created a demand for cargo war-risk coverage far beyond the normal and under exceptional hazards. With the opening of hostilities American ocean marine writing offices, faced with the cancellation of reinsurance treaties with London Lloyds, and the necessity of establishing new arrangements, determined to make the home market self-sustaining. To that end last June the American Cargo War Risk Reinsurance Bureau was launched, with a company membership possessing aggregate assets of approximately \$1,000,000,000. Under its plan a normal line of \$2,500,000 can be written upon a single vessel, and in exceptional cases twice that amount may be assumed. Moreover, the Exchange proved of distinct benefit to both the companies and to shippers, as was intended, for it enabled the former to assume liabilities far beyond that possible without such reinsurance arrangement, and it guaranteed to shippers that full indemnity was readily available and at uniform rates. When the sea-borne traffic of the Allied Powers, and in but slightly lesser degree that of neutral nations, was systematically attacked by German submarines and mines, marine war cargo rates changed rapidly, advancing for sea lanes where sinkings mainly occurred, and declining with a lessening of peril in other parts of the world. Whenever possible under sound underwriting practice, marine underwriters of this country met the rates for cargo insurance provided by the special insurance bureaus of the British and of other governments. It developed that many shippers favored the protection accorded by companies of America, rather than that granted by foreign governmental agencies, even where the rates of the latter were less than those charged by companies here. Insurance on hulls, as distinct from cargo war-risk indemnity, increased during the latter part of the year, induced in part by the higher values placed upon hulls and by the preference of many shipowners for indemnity from American companies rather than from foreign corporations or London Lloyds.

The demand for marine insurance on vessels sailing the Great Lakes was below the average through the better part of the year, but increased materially during the last three months, largely due to the shipment of material demanded by European nations. Despite the sinking of a number of vessels and the damaging of others through collision, the loss record for lake business in 1939 was held satisfactory.

Fire Insurance. At the beginning of 1939 the fire insurance carriers of the country—stock, mutual, reciprocals, and Lloyds—possessed total assets of about \$2,900,000,000, while their net premium income for 1938 aggregated over \$862,812,000. It is unlikely that complete returns for 1939 will show any marked change in these figures. The increase that may be looked for from such specialty lines as automobile, inland marine, fine arts, and the like, will probably be offset by the reductions in straight fire premiums, due to

the steady downward revision of rates upon many classes of business. In the 10 years, 1929 to 1938 inclusive, the average fire rate per \$100 at risk, fell from 89 cents to 69 cents, and the reducing process still goes on. On the other hand, the fire waste of the country is on the increase, the total losses as estimated by the National Board, having been \$313,498,840 in 1939, compared with \$302,050,000 suffered in the previous year. A vigorous campaign to reduce losses is being waged, with the co-operation of Federal, state, and municipal government agencies.

As a result of rate reductions and the relatively limited volume of new business offerings—both building and stock—the competition for premium income was severe throughout the year, as indeed it had been for some time previous. To escape undue loss underwriters exercised unusual care in the consideration of submitted risks, promptly rejecting those that did not measure up to required standards, or, whenever possible, inducing assureds to improve the character of their fire prevention equipment.

Upon the outbreak of the war in Europe and the assumption that business interests in this country would be affected thereby, fire companies arranged to grant indemnity against malicious mischief, damage caused by "sit-down" strikers, or other special types of hazard incident to periods of war or industrial upheaval. While no especial demand for any on these coverages arose during the year, numerous inquiries as to rates and the like made by brokers on behalf of their clients showed an interest in such coverage.

Of the total net premiums received by fire companies, a considerable percentage is derived from the automobile business—up to 50 per cent in one of the giant offices. The total automobile premiums in 1939 promise to exceed those of the preceding year, and, as was true in 1938, will yield a profit to the carriers despite the rate reductions applied in many sections of the country. The agitation against granting preferential treatment to finance companies in the matter of rates, long a sore point in the fraternity, continued, and, though no satisfactory answer has yet been found, the problem was explored by various managerial and agency committees and by a committee of the National Association of Insurance Commissioners.

In an effort to hold the cost of fleet business within bounds, the insurance companies fixed the commission to be paid at 30 per cent. Some of the leading financing companies of New York and other centers, rather than suffer any curtailment of income from insurance granted car purchasers on time payments, formed subsidiary insurance companies for handling their own accounts. Appreciating the field offered for loans for automobile car purchasing, banking houses in various centers are actively competing with specialty institutions, and in the main have the support of local agents who are usually accorded the writing of the insurance. See FIRE PROTECTION.

Casualty Insurance. Fire companies assume the fire, theft, and collision automobile hazards, and in some instances the property damage liability as well, though the latter is more particularly held to be a form of casualty indemnity. Casualty companies supplement the coverage of the fire offices by writing the bodily injury as well as the property damage and collision features, and the combination of fire and casualty

indemnity protects the motorist against every form of liability he or she is likely to encounter. Rates for the collision as well as for the fire and theft hazards are prepared by the National Association of Automobile Underwriters, while the charges for collision and bodily injury indemnity are fixed by the National Bureau of Casualty and Surety Underwriters, both types of carriers using the rates thus derived.

In the casualty and surety divisions of insurance the trend toward broadening policy and contract provisions without, in most instances, increasing the cost, was marked during 1939, especially in connection with the automobile division. Here under a revised classification of risks, owners of private passenger cars were granted policy concessions far more liberal than any previously proposed and at the same time were amenable to the 15 per cent premium return for a non-accident record over the twelve months. While the companies paid out large sums to assureds qualifying under the refund stipulation, the marked reduction in the number and seriousness of road accidents during the year proved that the safety stipulation had a distinctly beneficial influence, and company managers are heartened because of it. There will be an underwriting profit from the casualty lines on the year's operations despite the rate reductions and the extension of liability coverages added in all of the major risk classifications. As has been true over a considerable period, the burglary, machinery and boiler, and the plate glass divisions all scored a profit during the year.

In point of premium income workmen's compensation insurance ranks second only to that of automobile liability in casualty underwriting, its aggregate income in 1938 being \$253,931,368 against \$287,536,189 for automobile public liability risks. Rates for workmen's compensation are constantly undergoing revision, impelled by changes in state laws liberalizing benefits to workmen injured or killed in the course of their employment, and to fluctuations in the loss experience, both as to industry classifications and as to state records. While rates based upon loss experience were increased in certain commonwealths in 1939, they were reduced in others, the net result country-wide being an average decrease of 6 per cent.

Surety Bonding. Results in the fidelity and surety bonding fields through the year were fairly good, though, as one underwriter expressed it, "not enough to warrant a spirit of unmixed optimism." Contract bonds were in the main upon projects of the Federal Government and mounted into large figures. In the closing months of the year there was a notable sloughing off of large construction work which meant a lessening of premiums for the surety companies from such source. This shrinkage, however, was offset in part through the demand for bonds on merchant vessels, the construction of which was sanctioned by the Maritime Commission.

The cost of conducting business continued a major problem of company executives, and close study was given to all controllable items. Strict limits of agency commissions and brokerages allowable in the great income producing center of Cook County, Ill., were agreed upon by both the casualty and the surety acquisition cost conferences, and made operative as of December 1, with an administrator engaged to insure the carrying out of the new regulations.

Life Insurance. Washington supplied the two major life insurance developments of 1939. As the year progressed it became obvious that the life insurance phase of the Temporary National Economic Committee's broad monopoly investigation was aimed at promoting Federal supervision of life insurance. Insurance men opposed any such move, citing the adequacy of state supervision and distrusting further centralization of authority in Washington. However, despite a proposal by Senator Wagner of New York for government annuities to be sold through the postoffices, Senator O'Mahoney of Wyoming, TNEC chairman, denied any intention of putting the government into competition with private insurance.

Of equal importance to life insurance was the amendment of the Social Security Act to provide substantial income benefits to widows with dependent children, to the children themselves, and to widows age 65 and older. These benefits, plus the increase in retirement benefits and advancing the benefit payment dates to Jan. 1, 1940, gave millions of employees immediate and life insurance protection amounting to several thousand dollars apiece. Insurance men view this move as a stimulus to sale of new business. For unemployment insurance, see SOCIAL SECURITY BOARD.

Of major importance was the formation of the Institute of Life Insurance by a large group of representative companies, the aim being to interpret the life insurance business to the public and to pass along to the home offices the public's reactions on life insurance matters. The president is Holgar J. Johnson, former general agent Penn Mutual Life, Pittsburgh, and immediate past president of the National Association of Life Underwriters, the life agents' association.

Another development was the establishment of savings bank life insurance in New York State, following the Massachusetts pattern. By the year-end, seven banks had established insurance departments and seven more were acting as agency banks. Eight thousand policies were written for a total of \$6,500,000 of insurance in force.

Companies have scrutinized the war hazard, but only a few companies doing business in Canada or otherwise subject to special war risk exposure have inserted war risk exclusion clauses in their policies.

G. A. WATSON.

INSURANCE, SOCIAL. See FEDERAL CROP INSURANCE CORPORATION; FEDERAL DEPOSIT INSURANCE CORPORATION; RELIEF; SOCIAL SECURITY BOARD.

INTER-AMERICAN HIGHWAY. See ROADS AND STREETS.

INTERGOVERNMENTAL COMMITTEE ON POLITICAL REFUGEES, THE. This Committee organized in July of 1938 at Evian, France, at the instance of President Franklin D. Roosevelt, by his chosen representative, Myron C. Taylor, as set forth in the 1938 YEAR BOOK (*Jews, Refugee Problem*), was composed of representatives of 33 nations, and has since been continuously occupied with the problem of involuntary emigration.

The chairman of the Intergovernmental Committee is Earl Winterton of England, with the following vice-chairmen: Henry Bérenger of France, M. A. Le Breton of Argentina, Helio Lobo of Brazil, W. C. Beucker-Andreae of the Nether-

lands, and Myron C. Taylor of the United States. Sir Herbert Emerson now acts in the dual capacity of Director of the Intergovernmental Committee and High Commissioner for Refugees of the League of Nations.

At the very root of the social and political turmoil in the continent of Europe, which has now assumed the form of military warfare, is overpopulation. Crowding, in countries under the stress of economic ills, results in antagonism to minorities. Political groups tend to capitalize this antagonism to their own ends and, soon, there is pressure on the minorities of such a nature and degree that they are obliged to leave their country of origin and seek refuge in neighboring countries. But these countries, too, in Europe are over-crowded and can give succor only temporarily. The "minorities" must move on, somewhere, anywhere. Thus is created the migrant.

In normal times, when there is reasonable economic security, the pressure at the source is relatively mild and the flow of migrants as a consequence is within reasonable bounds. The world outside Europe is able to absorb individual migrants by infiltration and there is no need for finding and developing new lands. In abnormal times, however, when there is great economic stress, the trickle of emigration becomes a wild and chaotic stream of flight. In other words, the migrant, multiplied perhaps in the millions, has become the refugee.

In March, 1938, such a condition had arisen in the center of Europe. Pressure, notably in Germany, had reached a fever pitch. Men, women, and children were in flight by the hundreds of thousands. Countries of refuge, that is those countries immediately surrounding the zone of unrest, and countries of final settlement, including the United States, were faced by a common problem of great magnitude, not of their making it is true but which they could not wish away, and it was to meet this problem, as reported last year, that an Intergovernmental Committee was set up in London, with Mr. George Rublee as executive director.

From September, 1938, when Mr. Rublee took up his duties, to January, 1939, when the Director finally went to Berlin, attempts to establish contact with the German Government failed. The conversations initiated with Dr. Hjalmar Schacht were interrupted when his official position with the Reichsbank was severed. Under the ægis of Marshal Goering, conversations were renewed with Mr. Helmuth C. H. Wohlthat. These conversations covered the whole field of migration of minority elements in Germany and, on Feb. 1, 1939, Mr. Rublee received the detailed program which the German Government, acting unilaterally and independently, was prepared to adopt. Germany, it was made clear, was disposed to adopt a policy which would in every way facilitate and encourage the organized emigration of Jews and that, under certain conditions, it would put into effect a program designed to carry out this policy. The essence of the program was the desire of the German Government to emigrate an aggregate of 150,000 persons, consisting of men and single women between the ages of 15 and 45, who were individually capable of earning a living and were otherwise fit for emigration, over a period of three to five years. In addition to this wage-earning group, the German authorities desired that their dependents, estimated to

approximate 250,000 persons, should follow the wage earners when the latter were established and able to receive them. This latter group should emigrate by the normal channel of infiltration.

These desiderata of the German Government were set out in the first section of a German memorandum which dealt generally with the organization of emigration. For instance, it was provided that the organization should be supervised by Jewish bodies in Germany with the aid of foreign experts and that there should be adequate retraining facilities.

The second section of the memorandum dealt with the position of old persons and persons unfit for emigration who would have to remain in Germany and also with the position of those awaiting emigration. In fact, the memorandum outlined an entirely new policy on the part of the German Government in this respect, including a centralization of the administration of Jewish affairs, which at that time were largely handled by local authorities and party leaders, assurances that a Ghetto policy would not be resorted to, further assurances that these persons would have opportunities of employment, and agreement that the responsibility for affording public relief to those unable to work would be assumed by the German authorities.

The third section of the memorandum dealt with financing, specifically with the establishment of an internal trust fund, transfer arrangements, abolition of taxes and other restrictions upon the removal of emigrant property from Germany. In a brief word, Germany was willing to recognize that 25 per cent of the Jewish capital in Germany should be eligible for transfer abroad in order to finance emigration. The wealth eligible for transfer would be set aside and administered by three trustees, one of them a foreigner of recognized standing. The principle of private property would be respected, and it was hoped that the trust fund might be utilized by individuals who would make contributions. It was hoped that the emigrants who received the benefit of purchases out of the principal of the trust fund would be required to obligate themselves to make repayment to the purchasing corporation so that the equity of the original contributors to the fund would be maintained.

The transfer arrangements outlined in the memorandum would involve the purchase in Germany for export, out of the capital of the trust fund, of equipment for emigrants and capital goods for the development of settlement projects. Fundamentally the object was to establish relations on a businesslike basis between the authorities and the trustees of the fund in Germany and such outside settlement agencies as would have to be established to centralize and effect the purchases out of the fund.

While these conversations were in progress the officers, Chairman and Vice Chairmen, of the Intergovernmental Committee conferred in Paris and London, giving Mr. Rublee instructions; and following the conclusion of the conversations in Berlin, the Intergovernmental Committee met at London in February, 1939, and, taking note of Mr. Rublee's report, recommended that the Director should inform the German authorities that the Committee, acting independently, had been, was using, and would use its best endeavors to develop opportunities within the next five years for permanent settlement of involuntary emigrants from Germany within the limits of the laws and prac-

tices of the member governments, and took cognizance of the projected formation of a private international corporation which would serve as an agency for financing emigration from Germany and for maintaining such contacts with the German authorities as might be necessary for this purpose.

The February meeting of the Committee had, too, to consider a reorganization of the bureau in view of the fact that Mr. Rublee did not feel that he could remain absent longer from his private business. The Intergovernmental Committee was fortunate in being able to make an arrangement with Sir Herbert Emerson, the League of Nations High Commissioner for Refugees, whereby he would unite in his person, while the separate existence of the two organizations was maintained, the offices of High Commissioner and Director of the Committee. Sir Herbert Emerson was especially qualified for this post since, as Governor of various provinces in India, including the Punjab, he had organized transfers of population extending into the many hundreds of thousands. Moreover, Sir Herbert had back of him the personnel and machinery of the League Commission and the confidence of the principal governments concerned.

Between February and July the conversations with the German authorities were continued by Mr. Robert T. Pell, Vice-Director of the Committee. The first point that was agreed upon was that the program of the German authorities for the emigration of involuntary emigrants from Germany and the Committee's program for the resettlement of involuntary emigrants, as well as the establishment of the internal trust and an outside purchasing agency, should proceed *pari passu*. Accordingly, Mr. Wohlthat was informed in detail of the efforts that were being made to open up places of settlement and was also told of the conversations that had been initiated between private groups in New York and London looking to the establishment of an external trust or foundation. Mr. Wohlthat then took steps to prepare a draft decree providing for the establishment of the internal trust and a second decree setting up a central Jewish organization inside Germany. The next step, which was to have been taken had not war intervened, was to set up simultaneously the internal trust and the outside foundation, and to appoint the third or foreign trustee of the German internal trust.

In June, as a result of these conversations, Mr. Wohlthat agreed to come to London, where he met Lord Winterton, Sir Herbert Emerson, and the other personalities concerned with the refugee work and the organization of the foundation. Preparation was made for bringing the whole machinery into simultaneous action; September was named as the date. Unfortunately, the war intervened.

Negotiations with the German Government were only one aspect of the work of the Intergovernmental Committee. The Evian conference early sensed the conditions which in broad outline would need to be met to provide a workable basis for refugee activities. As time passed these became further crystallized. There appeared particularly four conditions which were essential if the problem was to be solved: (1) adequate time within which to carry out orderly emigration and settlement; (2) reasonable conditions for those awaiting emigration so that their departure might take place in a well-organized manner; (3) adequate

money for the financing of the emigration and resettlement of migrants, and (4) places in the world where the refugees might be resettled by both infiltration and large-scale settlement. Time, the three to five year period, was assured as a consequence of the conversations with the German authorities. Reasonable conditions for those awaiting emigration were promised by the German authorities. There remained to determine whether adequate funds could be raised and whether there were places where the migrants might be resettled.

To take the last point first, parallel with the conversations with the German Government strenuous efforts were made by private organizations under the ægis of the Intergovernmental Committee to discover new places in the world where refugees might be settled. In the one year, 1938, between 120,000 and 140,000 persons left Germany. A high proportion of these were still in what had come to be called countries of temporary refuge, such as Belgium, the Netherlands, Switzerland, the United Kingdom, and France. Many others had entered places of final refuge, notably the United States, by the normal process of individual migration. Others were awaiting resettlement in such unsatisfactory places as Shanghai. Clearly it was necessary to supplement infiltration by large-scale settlement, and accordingly the governments members of the Intergovernmental Committee were canvassed and opportunities for large-scale settlement were scientifically examined in British Guiana, the Dominican Republic, Northern Rhodesia, and the Philippines. Commissions were sent to these places and reported on the possibilities with varying degrees of enthusiasm. By the end of the year active steps had been taken to organize the projects made possible through the generosity of the Dominican Government and through the generosity of the Government of the Commonwealth of the Philippines. Other possibilities were being explored and a comprehensive program was being worked out under the auspices of the International Co-ordinating Foundation.

The scope of this Foundation, the organization of which was originally motivated by the necessity of setting up an outside purchasing agency to correspond with the internal German trust, was expanded so that when it came into being in July it had as its objectives, first, co-operation with individuals and organizations engaged in improving conditions of persons discriminated against in Germany because of their political or religious beliefs or racial origins; second, co-operation with the Intergovernmental Committee, League of Nations High Commission for Refugees, and any government, authority, body, trustee or other agency or official where, in the opinion of the Foundation, such action was calculated to benefit the refugees inside or outside Germany; third, the promotion of the improvement of conditions of those persons who for one reason or another were unable to leave Germany; fourth, co-operation with individuals and organizations in investigating the facilities for emigration and in conducting negotiations and arrangements for furthering plans of emigration and resettlement. A distinguished Anglo-American group, Jewish and non-Jewish alike, sponsored the Foundation and the management was placed in the hands of a small committee which made arrangements with M. Paul van Zeeland, former Prime Minister of Belgium, to serve as President.

In the meantime the problem of financing emi-

gration and resettlement of refugees was becoming serious. The burden of maintaining, emigrating, and resettling refugees between 1933 and 1939 amounted to over \$75,000,000, which was subscribed exclusively on a private charitable basis. The situation in the early months of 1939 was that private subscriptions were becoming less as the demands were becoming greater, and in addition the necessity for financing large-scale settlement had to be envisaged. It was clear that existing means of financing should be supplemented by fresh measures and the possibility of governmental financing was not ignored. At the July meeting of the Intergovernmental Committee the British Government announced that it was prepared to go into financing of emigration and resettlement on a 50-50 basis with private contributors, provided that other governments would do the same. The matter did not come to an issue because of the outbreak of war.

The concluding chapter of the first year of activity of the Intergovernmental Committee took place, upon the invitation of President Roosevelt, when the officers of the Committee, together with the President of the Co-ordinating Foundation, met at Washington on October 17 for the purpose of canvassing the new situation created by the outbreak of war. President Roosevelt, in an opening address to the officers, differentiated between the short-range problem, which was to emigrate refugees as soon as possible from the neutral countries of refuge such as the Netherlands, Belgium, and Switzerland, and the long-range program, namely that of resettling the many millions of people who might wish to leave Europe in the wake of the war. There was some disposition on the part of the belligerents to contend, in reply, that they were fighting the war precisely in order to put an end to refugee problems and to enable the refugees to return to their homes, but, after discussion, it was agreed that the Committee would do everything in its power to stimulate the investigation of places of large-scale settlement in order to be prepared for every contingency.

MYRON C. TAYLOR.

INTERIOR, U.S. DEPARTMENT OF THE. Harold L. Ickes of Illinois was Secretary of the Interior during 1939, and Harry Slattery was Under Secretary. By the administrative reorganization of July 1 (see under UNITED STATES), the Office of Education (q.v.) and the United States Housing Authority (see HOUSING) were removed from the jurisdiction of the Department of the Interior and transferred to the Federal Security Agency and the Federal Works Agency respectively. The National Bituminous Coal Commission was abolished as such, and its functions were taken over by the Secretary of the Interior. At the same time, the Department took over the Bureau of Fisheries, the Bureau of Biological Survey, and the Bureau of Insular Affairs, consolidating the last-named with the Division of Territories and Island Possessions. In line with the policy of reorganization, Secretary Ickes in December transferred the activities of the Wildlife Division from the National Park Service to the Bureau of Biological Survey and the Bureau of Fisheries; no change in personnel was involved. For expenditures of the Department, see the table under PUBLIC FINANCE. See also separate articles on the following divisions: BIOLOGICAL SURVEY, BUREAU OF; FISHERIES, BUREAU OF; GENERAL LAND OFFICE; GEOLOGICAL SURVEY, BUREAU OF; INDIAN

AFFAIRS, OFFICE OF; MINES, BUREAU OF; NATIONAL PARK SERVICE; RECLAMATION, BUREAU OF. **INTERNAL COMBUSTION ENGINES.** See ENGINES, INTERNAL COMBUSTION. **INTERNAL REVENUE.** See PUBLIC FINANCE.

INTERNATIONAL BANKING AND FINANCE. The outbreak of the European war had a profound effect on world finance. It made necessary the virtual suspension of the tripartite monetary agreement, under which the governments of Great Britain, France, and the United States had been collaborating in the interests of monetary stability. It resulted in the partial destruction of the sterling currency bloc, as most countries outside of the British Empire which adhered to that arrangement abandoned it when Great Britain declared war and imposed foreign exchange restrictions of her own. The war not only witnessed a marked increase in centralized control over finance in the belligerent countries, but it also gave rise to an agreement calling for very close financial and economic co-operation between Great Britain and France which was openly recognized in both countries as a step towards a post-war European economic federation.

Up to the final political crisis which led to the opening of hostilities among the major powers, the course of events in world finance corresponded rather closely to that in the closing months of 1938. Each new war scare, such as that which followed the German occupation of Bohemia and Moravia in March, brought an acceleration of the flight of capital from European countries to the United States, where these nervous funds were added to the enormous total of bank balances already accumulated here for European account. France, however, which was enjoying a recovery at the end of 1938 following the adoption of the Reynaud program for reducing government expenditures and liberalizing economic and social legislation, witnessed a further heavy repatriation of capital during the first half of the year. As a result, not only was it possible to increase the resources of the Bank of France through the transfer of 10,000,000,000 francs in gold from the Equalization Fund, but the gold holdings of that fund increased by leaps and bounds nevertheless to upwards of 17,000,000,000 francs by August. This heavy repatriation of capital from abroad facilitated the financing of the French government's deficit, and even permitted some refunding of maturing obligations at a reduced interest cost.

During the period preceding the final war scare, the pound sterling was pegged at \$4.68, the Equalization Account losing large amounts of gold in the process. In April, exports of gold from the United Kingdom to the United States were almost \$385,000,000, and they exceeded \$300,000,000 in May. Thereafter, the loss of gold by Great Britain was considerably smaller, although this was offset to some extent by shipments of earmarked gold from Canada to the United States.

Japan found it necessary to ship additional large amounts of gold to the United States to pay for her heavy purchases of needed materials and supplies, owing to the costly war in China. Although gold production in Japan and Japan-controlled territory on the mainland of Asia aggregated not much over \$60,000,000, Japan's gold shipments to the United States exceeded \$160,000,000. As a result, gold holdings of the Japanese stabilization fund declined to an alarming extent, making necessary the imposition of additional import controls

which forced the curtailment of operations in some industries dependent upon foreign raw materials. Japanese nationals were compelled to register all personal gold holdings, but they were not required during the year to sell these to the government, although they were encouraged to do so voluntarily. By limiting the consumption of other textiles, through government restrictions, the demand for silk within Japan increased sharply and a shortage of this fiber developed which caused the price to rise above \$4 a pound by the end of the year, but this did not provide sufficient additional dollar exchange to relieve the foreign exchange shortage.

War Finance. The British authorities withdrew financial support of sterling on August 25, and the quotation in New York declined to \$4.42 on that day. Shortly after the declaration of war in September, the Bank of England fixed official buying and selling rates for the dollar, which were \$4.04 and \$4.02, respectively, during the final months of the year. These rates were available, however, only for approved transactions, the British authorities permitting sterling to find its own level in other markets. An active free market for pounds which the Bank of England would not purchase, or which were not offered for sale in London for other reasons, developed in New York, where the rate fell as low as \$3.75 in September, but fluctuated between \$3.90 and \$4.00 for the balance of the year.

Currencies of most British Empire countries, France, Paraguay, Uruguay, and Japan declined with sterling. Canada, as usual, held her currency between the American dollar and the British

pound, as did Denmark and Finland. On the other hand, Holland, Belgium, Switzerland, and Argentina, as well as Norway and Sweden, ceased to base their currencies on sterling, and tied their monetary units more closely to the dollar. Japan also, near the close of the year, indicated that she would seek to tie the yen to the dollar rather than to sterling thereafter.

The belligerent countries, confronted with the task of raising huge sums to finance the war, imposed a large number of new financial controls. Capital exports were prohibited, and those who owned balances or securities abroad were compelled to register them so that the government was in position to take these resources over if needed to finance war-time imports. Very strict foreign exchange and foreign trade control was put into effect, and a number of commodities were subject to rationing. Every effort was made to prevent domestic commodity price inflation by increasing taxes and by selling bonds to small as well as large investors in order to reduce their purchasing power for consumption goods. In Great Britain, a special series of government obligations was created for sale to wage and salary earners, and the government from the start held that "business as usual," the motto of the early years of the World War, was inadmissible this time. The magnitude of the financial task before the allied governments was indicated when, before the Finance Committee of the French Senate, it was estimated in December that total government expenditures during 1940 would aggregate some 300,000,000,000 francs, of which about 220,000,000,000 francs would have to be borrowed. By comparison, it

FOREIGN EXCHANGE RATES, 1939

[Average of noon buying rates for cable transfers in New York. In cents per unit of foreign currency]

Month	United Kingdom (pound)	France (franc)	Germany (reichsmark)	Norway (krone)	Sweden (krona)	Denmark (krone)	Belgium (belga)
January	466.94	2.6369	40 066	23.459	24.041	20.841	16.893
February	468.57	2.6471	40.117	23.539	24.133	20.912	16.860
March	468.54	2.6488	40.098	23.539	24.130	20.912	16.823
April	468.05	2.6478	40 081	23.515	24.111	20.891	16.838
May	468.13	2.6487	40 115	23.519	24.110	20.895	17 016
June	468.24	2.6493	40 105	23 524	24.107	20.900	17.008
July	468 15	2.6488	40.113	23 520	24 114	20.896	16.991
August	461.07	2.6137	39 859	23 376	24.002	20 834	16.968
September	399.51	2.2651	39 500	22.655	23 763	19 317	17.028
October	401.05	2.2736	—	22.697	23.792	19.291	16.729
November	392.47	2.2246	40.132	22.703	23.798	19.294	16.490
December	393.01	2.2269	40 097	22.701	23.796	19.297	16 577

Month	Netherlands (florin)	Italy (lira)	Spain (peseta)	Switzerland (franc)	British India (rupee)	Canada (dollar)	Argentina (peso)
January	54.187	5.2603	4.613	22 582	34 881	99.194	31.126
February	53.626	5.2602	—	22 672	35 014	99.502	31.236
March	53.092	5.2601	—	22.614	35.057	99.583	31.234
April	53.132	5.2601	—	22.631	34.962	99.483	31.207
May	53.601	5.2603	11 023	22 480	34.916	99.620	31.210
June	53.167	5.2604	11.023	22 546	34.924	99.773	31.217
July	53.278	5.2605	11.023	22 550	34.905	99.835	31.211
August	53.484	5.2515	11.000	22.573	34.407	99.494	31.116
September	53.182	5.1445	10.492	22.576	29.928	91.255	—
October	53.115	5.0465	10.148	22.433	30.296	89.331	29.770
November	53.080	5.0444	10.039	22.428	30.127	87.755	29.772
December	53.107	5.0452	9.950	22.422	30.032	87.615	29.773

Month	Brazil (milreis) free market	Chile (peso) official	Mexico (peso)	China (yuan)	Hong Kong (dollar)	Japan (yen)	Australia (pound)
January	—	5.1739	19.483	16.256	29.107	27.205	372.06
February	—	5.1739	19.973	15.885	29.078	27.297	373.33
March	—	5.1733	20 026	16.016	29.049	27.300	373.27
April	—	5.1735	20.023	16.015	28.659	27.274	372.86
May	—	5.1733	20 025	15.987	28.884	27.277	372.89
June	5.1038	5.1737	19.753	13.434	28.916	27.284	373.12
July	5.0555	5.1703	17.133	10.637	28.703	27.279	373.03
August	5.0236	5.1691	16.800	7.163	28.213	26.870	367.32
September	5.0162	5.1776	19.023	6.696	24.863	23.459	318.38
October	5.0503	5.1713	20.151	7.638	25.030	23.510	319.51
November	5.0322	5.1714	20.497	8.353	24.491	23.440	312.66
December	5.0263	5.1705	18.105	7.487	24.482	23.441	313.13

may be noted that at the beginning of 1939 the French national debt was 549,000,000,000 francs.

Neutral countries imposed similar restrictions of their own in varying measure, especially those near the theater of war. The outbreak of war was less disturbing to totalitarian nations, since they already had such restrictive measures in effect before the beginning of hostilities. Latin American countries were confronted with a difficult exchange problem at the outbreak of the war, since they had been obtaining a considerable part of their manufactured goods requirements under clearing agreements with Germany, in exchange for raw materials that they produced. It proved necessary to tighten exchange restrictions in most of these countries to prevent a disturbing increase in imports from the United States, which would have to be paid for with dollars.

The highly significant Franco-British currency agreement, to remain in effect during the war and for six months thereafter, was made public on December 12. This fixed the quotation of the French franc at 176½ francs to the pound, and provided for the clearing of transactions between Great Britain and France so as to avoid gold shipments between the two countries. In addition, it was provided that neither nation would borrow abroad without the approval of the other, and that foreign loans obtained would be divided on the basis of 60 per cent to Great Britain and 40 per cent to France. Furthermore, they agreed to share equally between themselves all outlays in dollars and gold required because of the war, and to keep in close contact with each other in the formulation of their internal price policies.

The movement of foreign exchange rates during 1939 is shown in the table on p. 369.

Central Banking Policies. Central banks in belligerent countries were chiefly concerned with making available to their governments their gold reserves to facilitate the purchase of needed supplies abroad. On Sept. 6, 1939, the Bank of England transferred virtually all its gold stock of £279,000,000 to the Exchange Equalization Account, which thus came into possession for the first time of the entire monetary gold reserve of the country. When supplemented by the gold already held by the Equalization Account and foreign bank balances and securities registered with the British government, Great Britain was found to possess some \$3,500,000,000 of readily available assets to pay for purchases abroad. France, it was estimated, possessed a somewhat larger total that could be used similarly, and all British and French Empire countries some \$8,500,000,000. Needless

to say, the Allies planned to utilize these balances freely only in case of real need, as they constituted a reserve that could not be replenished readily, since loans from the United States are barred by both the Johnson Act and the Neutrality Act.

The Bank of France was much less affected by the outbreak of the war than the Bank of England, since it retained possession of its gold reserve. Advances to the French government, however, increased by 50 per cent to over 30,000,000,000 francs during the first three months of the conflict. In Germany, the chief change in the statement of the Reichsbank due to the war was a sharp rise in note circulation to almost 11,000,000,000 marks by the end of November, which corresponded with a sharp increase in holdings of Treasury bills of that institution.

Interest rates rose in virtually all countries with the outbreak of the war, but central banks sought to keep their money markets easy, and by the close of the year the trend of interest rates once again was generally downward. The Bank of England raised its discount rate on August 24 to 4 per cent, but on October 26 it was reduced from 3 to 2 per cent and remained at that level for the rest of the year. The Bank of France kept its discount rate at 2 per cent during the year and the Netherlands Bank, which raised its rate from 2 to 3 per cent on August 29, kept it at that level for the balance of the year. High interest rates were not regarded as needed to check inflationary tendencies, since direct economic control measures were preferred as being more effective.

Fluctuations in the gold reserves of central banks and governments during 1939 were as shown in the table below.

For par value of foreign currencies, see CURRENCIES, VALUE OF FOREIGN.

JULES I. BOGEN

INTERNATIONAL CHAMBER OF COMMERCE. An international federation of business organizations and business men, established in 1920 as a successor to the more loosely organized International Congress of Chambers of Commerce, which had met at intervals of two years for a considerable period before the World War. It has a membership of industrial, trade, financial, and insurance associations, chambers of commerce, shipping and transportation organizations, as well as an associate membership of individual business companies and business men in 54 countries.

Through 1939 the organization has held ten general congresses—London, Rome, Brussels,

GOLD RESERVES OF CENTRAL BANKS AND GOVERNMENTS

[In millions of dollars]

End of month	Total * (52 countries)	United States	United Kingdom ^b	France ^a	Belgium ^a	Netherlands ^a	Switzerland ^a	Japan ^a
1938—December.....	25,468	14,512	2,690	2,435	581	995	699	164
1939—January.....	24,003	14,682	1,042	2,435	582	995	699	164
February.....	24,175	14,874	1,042	2,435	588	974	680	164
March.....	24,387	15,258	1,066	2,435	518	909	640	164
April.....	24,964	15,791	1,066	2,574	520	834	598	164
May.....	25,140	15,957	1,067	2,574	524	823	598	164
June.....	25,290	16,110	1,067	2,574	540	800	598	164
July.....	25,512	16,238	1,162	2,574	573	769	595	164
August.....	26,118	16,646	1,162	2,714	614	769	585	164
September.....	25,254	16,932	1	2,714	615	752	585	164
October.....	25,300	17,091	1	2,714	611	754	579	164
November.....	25,511	17,358	1	2,714	608	700	559	164
December.....	25,782 ^p	17,644	1	2,714	609 ^p	690	557 ^p	164

* Data reported monthly incomplete since certain central banks and governments, and stabilization funds of France, Netherlands, Switzerland, and Japan, hold gold that is not reported. ^b Transferred: from Bank to Account, \$1,648,000,000 on January 6, and \$1,162,000,000 on Sept. 6, 1939; from Account to Bank, \$26,000,000 on March 1, and \$94,000,000 on July 12, 1939. Figure shows Bank of England only. ^p Preliminary.

Stockholm, Amsterdam, Washington, Vienna, Paris, Berlin, and Copenhagen, the Copenhagen Congress in June, 1939, being attended by more than 1000 delegates. The congresses declared policies relating to trade barriers, and the urgent need of sound commercial policies and adequate facilities for carrying on international business. The recent program has dealt primarily with governmental trade restrictions, and advocacy of international monetary stabilization. On these subjects the Chamber and the Carnegie Endowment in 1936 and 1937 collaborated in a comprehensive series of studies by experts.

The Chamber voted to continue its work when war broke out in Europe in 1939—its most important committee being one of "Inquiry for Economic Peace." There are committees covering industry, distribution, many aspects of foreign commerce, transportation, communications, finance, and various legal questions.

The President for 1939-41 is J. Sigfrid Edstrom, Swedish industrialist, Stockholm. Though certain activities are carried on at the Chamber's building in Paris, 38 Cours Albert Premier, the official headquarters address for duration of the war was designated as 9 Vastra Tradgardsgatan, Stockholm, Sweden. Eliot Wadsworth of Boston is Chairman of the American Committee; Winthrop W. Aldrich of New York is American Vice President. The office of the American Section is at 1615 H Street, N.W., Washington, D. C., Chauncey D. Snow, Manager.

INTERNATIONAL GEOLOGICAL CONGRESS. See GEOLOGY.

INTERNATIONALISM. See INTERNATIONAL LABOR ORGANIZATION; INTERNATIONAL RELIGIOUS MOVEMENTS; PEACE.

INTERNATIONAL LABOR ORGANIZATION. A permanent diplomatic and administrative association, having in its membership 56 nations of the world, including the United States.

The objectives of the Organization are the improvement of labor conditions within the member countries. The machinery of the Organization consists of an annual *Conference* of representatives of the member nations, and an *International Labor Office* controlled by a *Governing Body*, the latter consisting of 32 persons, 16 of whom represent the governments, 8 the employers, and 8 the workers, meeting quarterly.

The annual Conferences draw up *draft conventions* and *recommendations* affecting industrial conditions which are presented to the competent authorities in each member nation for ratification or adoption. Up to December, 1939, the Conference had adopted 67 Draft Conventions, and 865 ratifications had been registered. The International Labor Office, which is situated at Geneva, Switzerland, acts as a secretariat for the annual conference and as a bureau for the collection and dissemination of information bearing on the problems of labor and industry.

Four Draft Conventions were adopted by the International Labor Conference in June, 1939. These relate to the protection of native laborers in the matter of contracts of employment; arrangements for the eventual abolition of penal sanctions for breaches of contract of employment by indigenous workers; the protection of migratory workers with respect to recruiting, placing and conditions of labor; and regulation of hours of work and rest periods in road transport. The last mentioned Convention establishes a basic 8-hour day and 48-hour week for all persons who

are employed in commercial motor transport.

From December, 1938 to December, 1939 member countries registered 30 ratifications of I.L.O. Conventions. The United States in 1938 ratified 5 maritime Conventions relating to officers' competency certificates, intended to promote safety at sea;—minimum age of 15 years for employment of young persons at sea; liability of shipowners for the care of sick and injured sailors, representing a form of sickness and accident insurance for seamen; and hours of work and manning, establishing, with certain exceptions, a basic 8-hour day for seamen. Legislation to implement the legislation on officers' certificates of competency was enacted by Congress in 1939.

Since the United States joined the International Labor Organization, full tripartite delegations—representing government, employers, and workers—have been sent to every I.L.O. Conference. A Technical Conference to inquire into problems of the textile industry was held in Washington, D. C. in 1937. Regional Conferences of American States Members of the International Labor Organization were held in Santiago, Chile in 1936 and in Havana, Cuba in 1939. A citizen of the United States, Honorable John G. Winant, was elected the Director of the International Labor Organization in 1938, taking office January, 1939. Three other United States' citizens are at the present time on the Governing Body:—Honorable Carter Goodrich, U.S. Government representative, chairman; Henry I. Harriman and Robert J. Watt, elected by the employer and worker delegates respectively. Acting Director of the Washington Office is Ethel M. Johnson, 734 Jackson Place, Washington, D. C. See LABOR CONDITIONS.

INTERNATIONAL LAW. (See also LAW; LEAGUE OF NATIONS; WORLD COURT.)

GENERAL

In view of the widespread upheaval and tension of the year, it is not strange that articles in this field are in a pessimistic vein. Such are:

"The Rule of Law and the Disintegration of International Society," *Am. J. of Int. L.*, XXXIII, 56 (Georg Schwarzenberger); "The Outlook for International Law," *ib.* 105; (C. G. Fenwick); "International Law and Lawless Nations," *ib.* 743 (id.). Others are: "International Law and 'Public Order,'" *ib.* 545 (C. Eagleton); "*L'idée d'Évolution, la Société internationale et le Droit des Gens*," *Revue General de Droit International Public*, XIII, 9 (G. Vedel); "*Les Bases idéologiques de la Nouvelle Conception de Droit International de M. A. Verdross*," *ib.* 37 (E. Engelberg); "What of International Law?" *U.S. L. Rev.*, LXXIII, 437 (R. E. Ireton); "*Traité sur les Fonctions Internationales des Consuls*," (Paris, 1937), by J. Irizarry y Puente. ("Nothing comparable since the Milnitz treatise of over a century ago," *Am. J. of Int. L.*, XXX, 411). Consuls are also discussed in *L. Soc. Int.*, VIII, 427 (E. R. Sachs).

Conferences, Congresses, etc. Echoes of the Lima Conference (1938 YEAR BOOK, 565) are noted in *World Affairs Interpreter*, X, 9 (G. Stuart); "*Revue Internationale Française, au Droit des Gens*," VII, 133 (J. M. Yelpe); "*Revista de la Facultad de Ciencias (etc.) de Guatemala*," I, 430; *Am. J. of Int. Law*, XXXIII, 257 (C. G. Fenwick); *A.B.A. Jnl.*, XXV, 210 (B. Colby). The Cairo Telecommunication Conferences are discussed in *Air L. Rev.*, X, 298 (F. C. De Wolf). On February 20-22, representatives of the Balkan nations at Bucharest and of the Scandinavian states at Helsinki, considered subjects of mutual interest. Bulgaria and Hungary were not represented at the former, but their territorial demands were on the agenda. . . . The 11th Universal Postal Union Congress opened at Buenos Aires on

April 1 and sat for seven weeks. Among its results was a new postal convention (treaty) to replace that of Cairo which expired July 1. Meanwhile Argentina had promulgated, and Siam adhered to, the old treaty. Germany, Italy (with San Marino), Hungary, and Spain withheld adhesion to the new treaty because it retains Czechoslovakia as a member of the Union. The 25th session of the International Labor Conference opened at Geneva on June 8 under the Presidency of Dr. Edmond Schulthess, Swiss Federal Councillor. Countries represented numbered 45, with 154 delegates and 198 advisers. On the agenda were six questions, upon four of which recommendations were adopted and conventions drafted.

On July 18, anniversary of Uruguayan independence, and in the semi-centennial year of the first Pan-American Conference, which marked a new era for the hemisphere, delegates from the six southernmost and westernmost South American nations met at Montevideo to revise the treaty framed there a half century earlier. On September 23 a Pan-American Neutrality Conference, composed mainly of the foreign ministers or their representatives of the 21 American nations, opened at Panama City (thus realizing a dream of Bolívar) and sat until October 3 (see PAN-AMERICANISM). Some delegates considered the "Declaration" which resulted, a complement of the Monroe Doctrine (see *Am. J. of Int. L.*, XXXIII, 257).

PUBLIC

Territory. "The Aaland Islands Question" is treated exhaustively in *Am. J. of Int. L.*, XXXIII, 465 (Padelford & Anderson of the Fletcher School of Law and Diplomacy). Soviet demands concerning the islands have been asserted since. "Arctic Sectors" are discussed (*ib.* 518) by J. S. Reeves, who urges prompt assertion of the American claim "upon the basis of Byrd and Ellsworth's work." Byrd's latest expedition is equipped for something approaching colonization, which the State Department considers indispensable to support the claim. Ellsworth suggests "American Highland" as a name for the 81,000 square miles which he surveyed from a plane. A formal agreement (*ib.* 522) for 50 years of joint occupation by the United States and Britain of the two coral isles in the South Pacific, previously occupied under a provisional arrangement (1938 *YEAR BOOK*, 344) was effected on April 6. Nicaragua's new constitution, reaffirming the colonial boundary of 1821 instead of that fixed by the King of Spain in 1906, upon which Honduras insists, has revived a controversy which is being considered by the mediation boundary commission. Chinese sovereignty over Outer Mongolia is claimed in *Am. J. of Int. L.*, *ib.* 452 (L. Nemzer). "Extraterritoriality in China," is discussed in 89 *China Weekly Rev.*, 292 (C. S. Lobingier); *Cal. State Bar Jnl.*, XIII, 5 (H. D. Hoover). In *Chung Chi Cheung v. The King*, 55 *Law Times Rep.*, 184 (*Am. J. of Int. L.*, *ib.* 376), the British Privy Council rejected the view that a ship is a "floating island," held that "a public ship in foreign waters is not . . . territory of her own nation," and affirmed the conviction by a Hong Kong court of a British subject for murder committed on a Chinese customs vessel in British waters. A noteworthy feature of the opinion is its adoption of the discussion "by that great jurist, Ch. J. Marshall, in *Schooner Exchange v. M'Fadden*, 7 Cranch, 116 (1812), a judgment which illumined

the jurisprudence of the world." The British decision is criticised by Th. Baty (*Am. J. of Int. L.*, *ib.* 662) for having gone "beyond the necessities of the case."

Waters. Waters have acquired a new importance in the present European war, owing to the far-flung activities of submarines and the desire of neutrals to keep them from their coasts.

"Extending the Marine Zone" is discussed in *Columbia L. Rev.*, XXXIX, 317; "Fishery Control Beyond Three Miles," *Wash. L. Rev.*, XIV, 91; "Louisiana's Maritime Belt," *Tulane L. Rev.*, XVIII, 253 (J. A. Loret); "Diversion of Waters Affecting the United States and Mexico," *Tex. L. Rev.*, XVII, 27 (J. Simsarian).

Treaties. In the "Changing Field of International Law," *Am. J. of Int. L.*, *ib.* 337 (G. G. Wilson), the increasingly specific nature of treaties is noted and their extension "to novel, related topics." "Executive Agreements," as distinguished from treaties, are considered in *la. L. Rev.*, XXIV, 67; *Detroit L. Rev.*, VIII, 23 (W. H. Simpson). "Treaty Relations of the British Commonwealth of Nations," (N. Y., 1939) by Robert B. Stewart, "gives the *coup de grace* . . . to the doctrine that there still remain matters in which the United Kingdom may, by treaty, bind a Dominion without its consent." (P. E. Corbett in *Am. J. of Int. L.*, *ib.* 807.) Cf. *De la Competence du Canada pour conclure les Traités internationaux*, *Revue Générale de Droit International Public*, XII, 658 (A. B. Elkin).

Commercial Pacts. On November 6 a trade agreement between the United States and Venezuela, the twenty-second under the Reciprocal Trade Act (1937 *YEAR BOOK*, 344) and the eleventh with a Latin American nation, was signed at Caracas. It reduces by 50 per cent the duties on 35 items exported to Venezuela and the tax on oil imported from there. Negotiations with Uruguay, Argentina, and Chile are also announced, which would leave but six Latin American nations without such treaties. A movement to prevent extension of the Trade Act, which expires on June 12, 1940, was under way. Other trade pacts were signed as follows: Germany-Turkey, January 15; Italy-Soviet Russia, February 7; France-Yugoslavia, February 10; Germany-Italy, February 13; France-Germany, February 15; Germany-Uruguay, February 21; Brazil-United States, March 8-9; France-Rumania, April 1; France-Poland, April 21; Germany-Rumania, April 23; Slovakia-Poland, April 25; Germany-Lithuania, May 20; France-Poland, May 24; China-Soviet Russia, June 16; Bulgaria-Italy, June 20; Britain-Rumania, July 12; Germany-Japan, July 28.

The United States-Japan treaty (chiefly commercial) of 1911 authorizes either power to terminate it upon six months notice. That option was exercised by the United States on July 25. It was expected that negotiations for a new treaty would open in January, 1940 and meanwhile the U.S. Ambassador to Japan has notified the latter that no such treaty will be accepted by the former which fails to safeguard American rights in China and prevent repetition of the frequent violations thereof.

Non-aggression Pacts: Denmark-Germany, June 2; Estonia-Germany, June 8; Germany-Latvia, June 8; Colombia-Venezuela, December 17.

War. The year closed with International wars waged on a colossal scale on two continents and naval warfare throughout "the seven seas." See EUROPEAN WAR. Naturally the "law of war" became a favorite topic for the publicists.

A "Bibliography on Aggression" by Clyde Eagleton, covers 13 pages of the *Am. J. of Int. L.* (XXXIII, 831-843); "Evolution of the Concept of the Just War," *ib.* 665 (J. von Elbe); "Précis de droit maritime pour le temps de guerre," (Paris, 1937), by Raoul Genet, "an avowed positivist," is pronounced a "valuable addition to the extensive literature of the subject" (*Am. J. of Int. L.*, *ib.*, 794).

Neutrality. Under date of May 1, the Harvard Law School Research in International Law released for publication its draft conventions on three subjects, one of which was Neutrality, covering 114 articles and making a bulky volume (*Am. J. of Int. L.*, *ib.* sec. 2, No. 3) of over 600 pages. Little attention seems to have been paid to this elaborate instrument by Congress. (See NEUTRALITY.) Neutrality is discussed in *Yale L. Jnl.*, XLVIII, 37 (E. M. Borchard); *U. of Kan. Cy. L. Rev.*, VII, 109 (H. J. Morgenthau); "The Neutrality Bill," *Georgetown L. J.*, XXVIII, 82 (W. J. Deem).

Prize Law. On October 11, the U.S. freighter, *City of Flint*, en route to Glasgow, was seized in the Atlantic by a German warship, alleging contraband cargo (which the captain denied) and taken, ultimately to the Soviet port of Murmansk. The United States government, on the authority of *The Appam*, 243 U.S. 124 (1917) demanded its release by the Soviet government, which, instead, allowed the Germans to convoy her to Haugesund, Norway, where the German crew was interned and the ship returned to her American owners, who continued to Bergen, unloaded and sold her cargo. A protest by the German government was formally rejected by Norway, but the former later announced that the ship would be unmolested in returning, which she planned to do early in 1940. Argentina and Uruguay interned several German ships, including the *Graf Spee* (destroyed by its crew on December 17) found in neutral waters.

The *German Prize Court* held its first session at Hamburg on December 14. President Rothenberger claimed for it independence and impartiality in applying international law. Of the ships involved in cases heard the first day, one (Estonian) was released and two (Swedish) were confiscated. "Visit, Search and Seizure on the High Seas" (N. Y. 1938) by J. L. Frasca, proposing "a new code of prize law" is critically reviewed in *Am. J. of Int. L.*, XXXIII, 624 (T. Baty).

PRIVATE

Niboyet, *Traité de Droit International Privé Français* (Paris, 1938), vols. i, ii, treats this branch under (1) Nationality and Domicil, (2) Status of Aliens (Natural and Juridical), (3) Conflict of Laws. *Domicil* is the underlying subject of both prevailing and dissenting opinion in *Texas v. Florida*, 306 U.S. 398, involving the *situs* for taxation of the estate of the late Col. E. H. R. Green (1938 YEAR BOOK, 401) where, though he had various "residences," his domicil was found to be in Massachusetts.

Claims. In *United States* (on behalf of others) v. *Germany* ("Black Tom" and Kingsland cases), *Am. J. of Int. L.*, XXXIII, 770, the Mixed Claims Commission, by its Umpire (Supreme Court Justice Roberts) and the U.S. Commissioner (Garnett), on June 15, set aside its decision of 1930 (which absolved Germany upon the "industrial accident" theory) as having been obtained by fraud and perjury, and rendered awards in favor of the American claimants. The German Commissioner had written a letter to the Umpire accusing

him of bias and withdrawing from the case, and it was later announced that Germany would not "recognize" the award; but the U.S. Treasury has a German deposit account of about \$20,000,000, besides bonds, which however are of doubtful collectibility, and a substantial percentage of the original claims, aggregating \$22,500,000, with more than 20 years' accrued interest, may thus be paid. In a history of the cases (*A. B. A. Jnl.*, XXV, 845), J. C. Fehr, once counsel before the Commission, declares this "the greatest arbitration . . . of pecuniary claims."

The new Salvadorean Constitution provides that an alien who appeals against the government, through diplomatic channels except for "denial of justice," may lose his right of residence in the country and that such denial may not be inferred from the rendition of an unfavorable judgment.

International Claims are discussed in *Federal Bar Ass'n. Jnl.*, III, 205 (G. S. Knight); "Against the Soviets," *N. Y. U. L. Quar. Rev.*, XVI, 253 (A. N. Sack); "Evidence Before International Tribunals," *Arbitration Jnl.*, III, 155 (L. D. Egbert); Sandifer, "Evidence Before International Tribunals," (Chicago, 1939).

Conflict of Laws. In General: Power of Appointment and, *U. of Pa. L. Rev.*, LXXXVII, 403 (J. Mulford); The Characterization Problem, *Harv. L. Rev.*, LII, 747 (A. H. Robertson); Public Policy (Pa.), *Temple U. L. Quar.*, XIII, 216 (S. S. Asher, Jr.); *Va. L. Rev.*, XXV, 37 (G. Husserl).

RENOI, *U. of Pa. L. Rev.*, LXXXII, 34 (T. A. Cowan); *ib.* 257 (E. N. Griswold); *Canadian Bar Rev.*, XVII, 369 (J. D. Falconbridge); *Revue de Droit International*, etc., XX, 167 (J. Donnedieu de Vabres).

CONTRACTS (International). The Choice of Law by Parties to, *U. S. L. Rev.*, LXXXIII, 203 (M. Wolff); *La. L. Rev.*, I, 695 (C. W. Taintor); *S. Cal. L. Rev.*, XII, 335 (J. M. Cormack).

MARRIAGE, *Boston U. L. Rev.*, XIX, 353 (C. W. Taintor); *La. L. Rev.*, XXIV, 103 (J. R. Meltzer).

DIVORCE, *Ky. L. Jnl.*, XXVII, 106 (J. H. Goad); *ib.* 109 (B. T. Moynahan, Jr.); *G. W. L. Rev.*, VII, 648 (L. Fletcher, Jr.); *Mo. L. Rev.*, IV, 268 (R. A. Leflar); *Fordham L. Rev.*, VIII, 80 (New Trends); *V. Vreeland, Jr.*; *Ill. L. Rev.*, XXXII, 412 (J. S. Strahorn, Jr.).

PROOF, *Mo. L. Rev.*, IV, 299 (J. P. Hamshaw).

PROPERTY, *Harv. L. Rev.*, LII, 1246 (W. W. Cook); *U. of Pa. L. Rev.*, LXXXVII, 700 (C. P. Hine); *Georgetown L. Jnl.*, XXVII, 968 (A. P. Crenshaw); "Succession of Personality," *Yale L. J.*, XLVIII, 1443.

COPYRIGHT, "International Protection of Literary and Artistic Property," (2 vols., 1938, by Stephen P. Ladas); "a complete treatise on American copyright law is set forth in less than 200 pp." and it is shown to be "an integral part of copyright law throughout the world," *A.B.A. Jnl.*, XXV, 572 (L. D. Taggart); "Copyright Protection: The Battle over *Mein Kampf*," *Neb. Law Bull.*, XVIII, 257; "A Consideration of Copyright," *U. of Pa. L. Rev.*, LXXXVII, 932 (H. B. Umbreit); "Copyright" *Notre Dame Lawyer*, XIV, 343 (symposium of three papers, Messrs. Solberg, Spencer & Stone and O'Malley); "Statutory Restriction on Copyright Enforcement," *Air L. Rev.*, 206 (reprinted, *The Lawyer*, III, 17), E. E. Nobleman.

Copyright was discussed at the Montevideo Conference (*ante* p. 372). A majority of the delegates approved the practice of "lifting" material from any publication without payment, and merely by naming it. Delegates from Argentina and Paraguay opposed this; one of them declared it "legalizing literary piracy."

Property. On March 10 the Bolivian *Tribunal Supremo* sustained a two-year-old decree of the La Paz *de facto* government, forfeiting the \$17,000,000 investment of the New Jersey Standard Oil Company, and on December 2, the Mexican *Tribunal Supremo*, in an unanimous decision, upheld the constitutionality of the Presidential decree of Mar. 18, 1938 (1938 YEAR BOOK, 453,

5649), expropriating the properties of 17 oil companies (American, British, and Netherlands), valued at some \$400,000,000. The Court denied company ownership of the subsoil, or the right to reimbursement for future profits; but recognized the right to compensation "within 10 years," from proceeds of the government's operation of the company properties, and the return of papers and money seized during the proceedings. The United States State Department had previously demanded full indemnity. Three days after the decision, it was reported that some 5000 acres of the Taylor estates (American) in Jalisco had been similarly expropriated. The general subject is discussed in *A.B.A. Jnl.*, XXIV, 813 (F. R. Coudert); *Cal. St. Bar Jnl.*, XIII, 27 (J. M. Sheridan); *Nat. Lawyers' Guild Quarterly*, I, 367, II, 32 (A. C. Weinfeld).

C. SUMNER LOBINGIER.

INTERNATIONAL PENAL AND PENITENTIARY CONGRESS. See PRISONS, PAROLE, AND CRIME CONTROL.

INTERNATIONAL RELIGIOUS MOVEMENTS. Because of the somewhat complex organizational relationships of the American Section of the Life and Work Movement—usually spoken of as the Universal Christian Council—it is necessary to point out that it is now a transitional period in that the Council will become a commission of the World Council of Churches at the time of the first world assembly in 1941 of that newly formed organization, which likewise embraces the present World Conference on Faith and Order.

In January the Archbishop of York, as chairman of the Provisional Committee of the World Council, called a meeting in Paris for the furtherance of the work. Drs. Stevenson, Cavert, Leiper, Mott, and Van Dusen were representatives from America. The Paris meeting decided to call the first Assembly of the World Council in 1941; projected a special conference of experts on the European crisis, to see if anything could be done to avert the impending war; approved plans for a world preaching mission; set up committees of consultation and co-operation jointly with the World Alliance for Friendship Through the Churches and the International Missionary Council; arranged for the opening of a London office under the care of Dr. William Paton; reviewed the program of study for the research department of the Universal Christian Council at Geneva and the Theological Commission of the Faith and Order conference at Oxford; reviewed arrangements for the World Conference of Christian Youth at Amsterdam (held under the joint auspices of the World Council and other ecumenical bodies), and appointed a new secretary to deal particularly with the problem of co-ordinating Church efforts to care for Christian refugees from Germany, in particular pastors (more than forty of whom subsequently got out of Germany, many from concentration camps, through the untiring efforts of the Bishop of Chichester, chairman of the Executive Committee of the Universal Christian Council).

The Conference of Christian Youth, held at Amsterdam was made up of youth averaging about 25 years of age, and demonstrated in many ways the growing of at least a nucleus of a consciously universal Christian fellowship. The organizing secretary of that gathering of 1700 from over 70 nations was Edwin Espy, youth executive

jointly of the Universal Christian Council and the World Alliance for International Friendship Through the Churches. The chairman of the conference committee was Dr. Henriod, former General Secretary of the U.C.C. and the conference chairman was Dr. Bissert 't Hooft, General Secretary of the World Council's Provisional Committee.

The report of the Geneva Conference on "The Churches and the International Crisis" has been characterized as the most valuable report produced by the joint work of ecumenical leaders in modern times. To its making statesmen, economists, international experts, theologians, and educators contributed. It outlines the causes of war, the continuing responsibilities of the Churches, the immediate task of the Churches, and the duties of Churches in times of war. Since Chinese and Japanese, French and German, Orthodox and Roman Catholic, Europeans and Americans participated, it took on a universal character not hitherto attained in any similar study.

In July, the Administrative Committee of the World Council met in Zeist, Holland. It approved for circulation to the churches of the world the report of the experts' conference in Geneva on the Churches and the International Crisis, authorized the holding of the first World Assembly in the United States, if possible in 1941, elaborated plans for the World Preaching Mission, selected the theme of *The Church's Witness to the Modern World* as the one to be featured by the first World Assembly, heard reports of the favorable action of more than 50 denominations on the invitation to join the Council, and discussed certain procedures to be followed in keeping the churches in contact with one another, if war should come, as then appeared inevitable.

Following the European meetings there was held in New York City on October 4 a joint meeting of the American Sections of Life and Work and Faith and Order, at which Dr. William Adams Brown (for some time chairman of the Universal Christian Council) was elected as successor of the late Dr. J. Ross Stevenson as Chairman of the Joint Executive Committee which carried on the American Sections during the year. The meeting approved the continuation of the administration of the work on the joint basis and discussed the work of the ecumenical movement in wartime, although at that juncture it was too soon to make final decisions as to the form our co-operation must take.

At Geneva the Information Service has been expanding through recent years and now reaches a very large number of papers throughout the world with reliable and comprehensive news concerning the churches and their various activities. Service for refugees is carried on by the central organization and its branches. Four hundred scholars have been enlisted in the development of studies growing out of recent ecumenical conferences, and the quarterly *Christendom*, owned by the Joint Executive Committee in New York and which circulates among church leaders throughout the world. In July, a statement of religious principles in world affairs adopted by 290 Protestant, Roman Catholic and Jewish leaders and released by the Rt. Rev. G. Ashton Oldham, President of the American Council of the World Alliance embodied six principles of peace. The tasks for religious action were declared to be:

First, there is the task of opposing war as an instrument of national policy. Men and women of goodwill in

all countries should reaffirm the conviction that international problems can be solved by peaceful methods alone. The aftermath of war is economic, social, and moral disintegration.

Second, the religious man can make an immediate expression of goodwill in a world of conflict by giving humanitarian aid to the victims of oppression and aggression.

Third, it is necessary to oppose the hatreds and prejudices which breed wars. Religious people should reaffirm the solidarity of all peoples. Racial or religious discrimination and intolerance are incompatible with genuine goodwill.

Fourth, there is need to oppose injustice to nations and to groups within nations, for injustice is directly or indirectly a major cause of war. The claims of individual states must be settled in accordance with the rights of all peoples. They should be adjusted on the basis of needs, not on the basis of power. Peace is a by-product of righteousness.

Fifth, men of goodwill should work for adequate peace machinery as the prerequisite to the pacific settlement of disputes. There will be anarchy just so long as sovereign states claim to be the sole judges of disputes in which they are involved.

Finally, being concerned with the welfare of all peoples, we need to oppose direct or indirect support of those governments which do engage in war as an instrument of national policy. Aggression must be opposed wherever it is threatened or manifested. To furnish the sinews of war to aggressor states is a grave injustice, not only to the immediate victim of aggression, but to all peoples, because such aid encourages new aggressions and the spread of war. Religious groups should, we believe, urge upon their peoples and governments that the price of peace includes the refusal to profit from war by economic participation in aggression.

The twenty-fourth Annual Meeting of the World Alliance for International Friendship through the Churches was held in New York, November 10. The Rt. Rev. G. Ashton Oldham, Bishop of Albany and President of the American Council of the World Alliance, presided and gave the opening address. The other speakers were Mr. Thomas J. Watson, President of the International Business Machines Corporation; Dr. Ralph W. Sockman, Pastor of Christ Church, New York, and Vice-President of the Church Peace Union; Mrs. Vera Micheles Dean, Research Director and Editor of the Foreign Policy Association, and Dr. William Pierson Merrill, President of the Church Peace Union.

CLINTON ROGERS WOODRUFF.

INTERSTATE COMMERCE COMMISSION (ICC). The Interstate Commerce Commission, established by act of Congress in 1887, is the oldest regulatory agency of the Federal Government. The carriers subject to its jurisdiction transport the greater part of the freight and commercial passenger traffic in the United States. Created originally for the purpose of improving conditions affecting railroad transportation, it has also for many years exercised certain powers over water carriers engaged in rail-water transportation in connection with railroads as well as pipe lines. Since 1935 the Commission has been charged with the regulation of motor carriers.

The changed conditions which have almost revolutionized land transportation in the past quarter of a century have had an important effect on the Commission's work. Railroad mileage in the United States increased steadily until 1916 and since that year has slowly declined. The figure for 1938 was almost exactly the same as that for 1909. In 1939 the Commission authorized the abandonment of about 2000 miles of line, offset by authorized new construction of only 29 miles. Since 1935 nearly 100,000 motor-carrier operators have sought operating authority

under the motor-carrier act, and the Commission's identification plate appears on 234,215 motor vehicles. Of these 32,498 were issued in 1939.

A considerable part of the Commission's routine work in 1939, as in former years, had to do with the regulation of railroad rates, the authorization of securities issued by railroads, the collection and publication of statistics relating to railroads and other carriers, enforcement of statutes for the promotion of safety in railroad operation, and the discovery of violations of criminal and penal statutes intended to prevent illegal practices on the part of shippers and carriers.

The extraordinary number of bankrupt railroads in recent years has added to the work of the Commission, which under the bankruptcy act must approve plans for the financial reorganization of such railroads. In 1939 the Commission approved reorganization plans for seven class I railroads and a similar number of railroads of other classes.

The Commission's work in the regulation of motor carriers has passed beyond the initial stage, which was occupied chiefly with applications for operating rights. The emphasis has now shifted to safety, enforcement, and rates. Rules have been prescribed concerning safety and insurance, and revised tariff rules to facilitate ascertainment of applicable rates have been prepared and are under consideration. Safety inspectors have been added to the field staff, who, in cooperation with representatives of State governments, are engaged in educating motor carriers in methods of operation designed to reduce highway accidents and secure compliance with the Commission's safety regulations. In 1938 the number of motor-carrier accidents reported by carriers subject to the Commission's jurisdiction was 30 per cent less than that in 1937, and fatalities decreased 39 per cent.

To promote more effective performance of its expanding and changing duties the Commission in 1939 put into effect a new plan of organization under which its membership was divided largely along functional lines into five divisions. The term of the chairman, who is chosen by the Commission, was made three years instead of one year, as it had been for many years previously.

JOSEPH B. EASTMAN.

INVESTIGATION, FEDERAL BUREAU OF. See **FEDERAL BUREAU OF INVESTIGATION.**

INVESTMENTS. See **BANKS AND BANKING; FINANCIAL REVIEW.**

"INVISIBLE" GLASS. See **GLASS.**

IOWA. Area and Population. Area, 56,147 square miles; included (1930) water, 561 square miles. Population: Apr. 1, 1930 (census), 2,470,939; July 1, 1937 (Federal estimate), 2,552,000; 1920 (census), 2,404,021. Des Moines, the capital, had (1930), 142,559 inhabitants.

Agriculture. Iowa's harvest of principal crops of 1939 comprised 20,475,800 acres. For the second year in succession the area of corn fell short of half of the whole harvested area. Corn, on 9,688,000 acres, yielding 52 bu. an acre, made 503,776,000 bu. (in approximate value on the farm, \$267,001,000). Oats, on 5,076,000 acres, gave 154,818,000 bu. (\$41,801,000); tame hay, 3,498,000 acres, 4,814,000 tons (\$26,958,000); soybeans, their fast-rising yearly harvested acreage attaining 487,000, yielded 10,227,000 bu. (\$7,670,000); barley, on 563,000 acres, 13,794,000

bu. (\$5,242,000); potatoes, 56,000 acres, 5,600,000 bu. (\$4,200,000); wheat, 390,000 acres, 6,490,000 bu. (\$4,218,000).

Manufacturing. Establishments engaged in manufacturing in Iowa numbered in 1937, 2454 (in 1935, 2457); they employed 67,878 wage earners (in 1935, 56,541) and paid them \$76,193,244 (in 1935, \$55,482,989). The value of these establishments' output was \$709,458,428 for 1937 (for 1935, \$575,370,868); the sum contributed thereto by manufacture, \$236,063,603 (for 1935, \$176,563,091). Meat-packing was the foremost of the manufactures: 24 packing establishments employed 9521 wage earners in 1937, paid them \$12,317,882 in wages, and produced goods to the value of \$223,884,903, to which they had contributed by manufacture, the value of \$28,700,046. This did not include establishments dressing poultry, whose output was \$19,135,427. Butter made in 459 establishments had the value of \$67,865,558, of which manufacture contributed \$6,971,493. Products of Indian corn, such as starch and syrup, were made to the value of \$25,929,265. Grain mills produced flour and other goods to the value of \$11,155,198. The output of planing mills was \$17,309,710. Despite the production of a variety of mechanical articles, manufacturing bore for the most part a fairly close relation to the State's agriculture and animal husbandry.

The city of Waterloo had 67 manufacturing establishments, employing 8128 wage-earners, that produced goods to the total value, in 1937, of \$104,803,951. The output of manufactures in 1937 at Cedar Rapids totaled \$81,162,837.

Mineral Production. The latest estimate from the U.S. Bureau of Mines stated the yearly value of the production of native minerals in Iowa as \$26,941,350 for 1937. Coal made up more than one-third of this figure; cement, over one-fourth; stone output and clay products came next. The yearly production of coal diminished to some 3,250,000 net tons for 1938, from 3,637,000 tons (value, \$9,529,000), for 1937. Cement-makers shipped a total, for 1938, of 4,759,390 barrels of portland cement, as against 4,598,453 for 1937; by value, \$7,327,048 (1938) and \$7,046,021 (1937). Of the production of stone—\$3,782,480 for 1938 and \$4,276,891 for 1937, more than three-fourths was for concrete, road metal and railroad ballast. Clay products (exclusive of pottery) attained for 1937 the value of \$2,731,810. The important yearly production of gypsum, 364,920 short tons, value \$495,856, for 1938 was worth rather more than this amount to the State's economy, as much of the gypsum was calcined before shipment and thus attained a higher value.

Education. For the academic year 1938-39 Iowa's inhabitants of school age (from 5 years to 21) were reckoned as 681,299; The year's enrollments of pupils in the public schools numbered 511,326; this comprised 369,304 in elementary study, 138,041 in high schools, and 3981 otherwise classified. The year's expenditures for public-school education totaled \$52,960,542. The 25,205 teachers were paid at the average, for the year, of \$943.

Legislation. The regular biennial session of the Legislature convened January 9 and continued until late in April. It enacted a general appropriation bill allowing \$21,161,863 a year for the next two years' operation of the State government. Both houses having lately come under Republican control, the time was seasonable for the passage of laws changing the governmental organization

inherited from the Democratic era. The session abolished the existing Board of Assessment and Review, ended the system of paying, for the collection of the taxes on sales and on incomes, allowance of 3 per cent of the receipts, and created a new Tax Commission and subsidiary personnel, charged with the collection of the State taxes in general. Similarly, a Public Safety Act that was sent to the Governor created a new Department of Public Safety and put in its charge the State Highway Patrol, the bureau of criminal investigation and other such services. An act to hinder the introduction into Iowa of cigarettes bought elsewhere, without paying the Iowa tax, attempted to stop a conspicuous leak in the gathering of revenue. Another reorganizing act changed the make-up of the Board of Social Welfare, adding to this board's duties the administration of the State's functions in poor-aid. Still another act centralized authority over the State's several libraries in a new ex-officio board.

The Legislature voted expenses to a delegation that was to return to Alabama a Secessionist flag taken from the State House at Montgomery during the Civil War and long kept in the Iowa Historical Museum.

Political and Other Events. Gov. George A. Wilson, who took office January 12, brought the State under Republican administration for the first time in six years. His inaugural speech put stress on the desirability of consolidating or of giving up some of the bureaus of Iowa's administrative government; he advocated better financing of the public schools and their removal from partisan politics; further development of the "farm-to-market" roads; laws to help farmers individually to buy lands held by corporations; and more laboratory work at the State colleges, for the finding of new means of using the surplus of products from the farms.

The State Supreme Court in a decision rendered on January 10 terminated the State's moratorium on the foreclosure of mortgages, by applying the idea of departing emergency. Without denying that the Legislature had possessed the power to pass the moratorium of 1933 and its subsequent modifications, the decision followed the formula that as the emergency that warranted these acts diminished their constitutional validity tended also to lose its virtue, which was now extinguished. An aftermath of the Maytag Washing Machine Company strike of May, 1938, a sentence of fine and imprisonment given by the lower court to three officers of the striking workers' union, for violating an injunction not to continue picketing in mass, was affirmed by the State Supreme Court (April 4), but the prison sentence was suspended, leaving the defendants obliged only to pay fines of \$500; another of the strike leaders, William Sentner, was convicted of criminal syndicalism (October 6) and fined \$2500, in a State court.

Governor Wilson, by order of April 26, removed from office the three members of the State Board of Control, the authority over the State's 15 institutions of care and custody. In stating reasons for this action the order acquitted the three of dishonesty and of maladministration but blamed them for "deplorable conditions which due diligence on their part would have prevented or remedied"; the removal came soon after the publication of accounts of unchecked misbehavior among inmates of some State institutions.

North of Clinton, Dam No. 13, part of the U.S.

Engineer Corps' yet incomplete task of canalizing the upper Mississippi River by means of successive dams and locks, was dedicated June 18. This dam, 14,076 feet long, was a faced earthen dike and had cost an estimated \$5,000,000.

Officers. Iowa's chief officers, serving in 1939, were: Governor, George A. Wilson (Rep.); Lieutenant-Governor, Bourke B. Hickenlooper; Secretary of State, Earl G. Miller; Auditor, C. B. Akers; Treasurer, Willis G. C. Bagley; Attorney-General, Fred D. Everett; Secretary of Agriculture, Mark G. Thornburg; Superintendent of Public Instruction, Jessie M. Parker.

IOWA, THE STATE UNIVERSITY OF. A co-educational State institution of higher learning in Iowa City, founded in 1847. The enrollment for 1938-39 was 10,432. For the autumn of 1939 the enrollment was 8665, including 1861 correspondence students not also registered in residence. The 1939 summer session registration totaled 3936, including 954 correspondence students not also registered in residence. There were approximately 500 members on the faculty. The income for 1938-39 was \$5,192,963. The libraries contained 624,600 volumes. President, Eugene Allen Gilmore, A.B., LL.D.

IOWA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS. A State institution for the higher education of men and women in Ames, Iowa, founded in 1868. The enrollment for the fall quarter of 1939 was 6475. The registration for the first half of the 1939 summer session was 1470, and for the second half, 657. The faculty numbered 592 members. The endowment funds amounted to \$824,270 and the income for the year was \$4,453,000. The library contained approximately 280,000 volumes. A new dormitory for women, \$272,640; a new dormitory for men, \$206,700; new radio antenna and equipment, \$50,000; and Service Building, \$110,000, were all built within the year 1938-39. President, Charles Edwin Friley, LL.D.

IRAN (PERSIA). A kingdom of southwestern Asia. Capital, Tehran (Teheran); sovereign in 1939, Shah Riza Khan Pahlevi, who was crowned Apr. 25, 1926.

Area and Population. Area, about 628,000 square miles; population, estimated at 15,000,000 on Dec. 31, 1937, including besides the dominant Iranians large minority groups of Turks, Kurds, Leks, Baluchis, and Gipsies. About 3,000,000 inhabitants are nomads. Estimated populations of the chief cities: Tehran and district, 360,000; Tabriz, 219,000; Meshed, 139,000; Shiraz, 119,000; Isfahan, 100,000; Hamadan, 99,000.

Education and Religion. The bulk of the population remains illiterate, but education has made rapid strides in recent years. Schools of all kinds in 1937 numbered 4939, with 273,680 pupils. About 900 Iranians were studying in foreign universities in 1938, most of them on government subsidies. The people are mainly Moslems of the Shiite sect; there are also about 50,000 Armenians, 40,000 Jews, 30,000 Nestorians, and some native Christians, Bahais and others.

Production. While agriculture and stock raising support the bulk of the population, the oil industry is the principal source of government revenue. Production of the chief crops in 1936-37 was estimated as follows (in metric tons): Wheat, 2,159,600; barley, 882,600; rice, 398,500; beet sugar (1937-38), 26,100; tobacco (1937-38), 15,900; cotton, 37,200; dates (1935-36), 105,158; raisins, 52,191 (1935-36). The wool and mohair

clip in 1937 was estimated at 17,000 metric tons. Oil production in 1938 was 10,359,000 metric tons (see *History*). The government is pushing industrialization of the country through state-owned factories and subsidy of private industries. Cement, cotton and woolen yarns and fabrics, matches, refined sugar, silk textiles, and iron and steel are the principal new industrial products. The carpet and rug industry, however, is still the most important. The Anglo-Iranian Oil Co. has a great oil refinery at Abadan.

Foreign Trade. Merchandise imports in the calendar year 1938 were approximately 1,508,760,000 rials (1,258,800,000 in 1937); exports, 2,560,000,000 (2,582,040,000). Trade is mainly with the Soviet Union, Great Britain, Germany and the United States. Petroleum accounts for nearly three-fourths of the value of all exports. The chief imports are cotton piece goods, machinery and tools, sugar, vehicles. See **IMPORTS AND EXPORTS** for U.S. Trade.

Finance. The regular budget for the Iranian year 1318 (Mar. 22, 1939 to Mar. 21, 1940) placed receipts at 1,930,096,700 rials (\$110,884,055) and expenditures at 2,613,418,987 rials (\$150,144,540).

Royalties from oil, which amounted to £3,545,313 in 1937, are kept in the reserve fund and omitted from the budget. Actual results of budget operations were not available. The recognized foreign debt outstanding as of Apr. 8, 1938, was £991,060. On Dec. 31, 1935, there was an unfunded foreign debt of about £2,000,000 and an internal floating debt of 6,661,428 rials. The rial was officially quoted at about \$0.057 in 1939. Effective Dec. 21, 1939, the National Bank of Iran was authorized to fix the value of the rial in relation to foreign currencies at 40 per cent less than the gold value of the rial.

Communications. The 866-mile Trans-Iranian railway from Bandar Shahpur on the Persian Gulf to Bandar Shah on the Caspian Sea was completed Aug. 26, 1938, and freight service was started in December, 1938. A new railway line between Tehran and Semnan was opened to traffic in September, 1939. Two other lines were under construction from Tehran to Tabriz and Yezd, respectively. Total railway mileage, 981; highways, 14,402. An air line connects Tehran and Kermanshah with Baghdad in Iraq. In 1936-37, 6,608,600 tons of shipping entered the Persian Gulf ports. See **ROADS AND STREETS**.

Government. Executive power is exercised by the Shah, acting through his cabinet appointees. The parliament (Medjliss) of 136 members, elected for two years, sanctions measures proposed by the Shah and his cabinet. Premier in 1939, Mahmoud Djam, appointed Dec. 4, 1935.

History. The government extended its modernization program in 1939 to include agriculture as well as industry. To increase agricultural production, plans were formulated for the distribution to peasants of public domains in the southern part of the country. A decline in oil exports of 200,000 tons in 1938 as compared to 1937 led the official press to attack the Anglo-Iranian Oil Co. in 1939 on the ground that it was not carrying out its promise to expand the country's oil output. In his report for 1938 to the general meeting of the company in London June 26, 1939, Lord Cadman, the chairman, reported the net production of its Iran field at 10,195,000 tons, the profit £6,109,477, and the dividend 20 per cent. He stated that the Gach Saran field, discovered two years before, was in the early stages of development, and that

oil had been struck in another new structure that promised to be of major importance. He announced that the company had received permission to establish a refinery and port near Bandar Mashur on the Khor Musa waterway.

A marriage contract between Crown Prince Mohammed Riza Pahlevi of Iran and Princess Fawzia, 17-year-old sister of King Farouk of Egypt, was signed in Cairo Mar. 15, 1939. The wedding took place in Tehran in April. It was the first alliance by marriage in modern times of the two leading Islamic countries and of two leading Moslem sects, according to the *New York Times*. The Crown Prince and his bride belonged to the antagonistic Shiite and Sunni sects, respectively, and the union was viewed as another step toward a united Islam.

Diplomatic relations between the United States and Iran, severed by the Shah in 1936 in protest against allegedly slighting references to Iran in the American press, were resumed in 1939. Soviet pressure on Iran for oil concessions and control of its rice production was reported in October. This aroused fear in Iran and abroad that Moscow planned to seize the opportunity afforded by Britain's absorption in war in Europe to establish political control over Iran and possibly secure a naval base on the Persian Gulf.

IRAQ (IRAK). An Arab kingdom occupying the basin of the Tigris and Euphrates Rivers in Mesopotamia. Capital, Baghdad. King, Feisal II, who succeeded to the throne upon the death of his father, Ghazi I (q.v.), Apr. 4, 1939.

Area and Population. Area, 116,600 square miles; population, estimated at 3,670,000 on Jan. 1, 1938. Chief cities, with estimated populations (1938): Baghdad, 340,000; Mosul, 98,000; Basra, the chief port, 62,000. Language, Arabic.

Education and Religion. Despite free primary education, illiteracy remains high. Latest available education statistics show 717 state and 79 private elementary schools, with 106,034 pupils; 40 intermediate schools (9039 pupils); 12 secondary schools (1362); 16 vocational and professional schools (2046 students). In 1935 there were 3,136,632 Moslems, 101,375 Christians, 90,970 Jews.

Defense. The standing army and air force on June 30, 1938, comprised 28,000 officers and men. Compulsory military service for males between 19 and 25 was introduced in 1936. The police force numbered 10,192 men in 1938.

Production. Agriculture, stock raising and petroleum mining are the chief occupations. The petroleum output, most of which goes by pipeline to Haifa, Palestine, and Tripoli, Syria, for transport to Europe, was 4,272,000 metric tons in 1938 (4,255,000 in 1937). The chief crops are (production in metric tons): Dates, 160,572 tons (exports, 1935-36); wheat, 600,000 (1938); barley, 570,000 (1937); rough rice, 360,000 (1938); tobacco, 4000 (1938); cotton, 2900 (1938). Wool and mohair production in 1937 was about 7400 metric tons.

Foreign Trade. Merchandise imports in 1938 totaled 9,192,000 dinars (9,612,000 in 1937); exports, excluding crude oil shipped by Iraq Petroleum Co., 3,492,000 dinars (5,568,000). Trade is mainly with the United Kingdom, Japan and the United States. See IMPORTS AND EXPORTS.

Finance. For the fiscal year ended Mar. 31, 1939, budget accounts showed a surplus of 193,000 dinars in the ordinary budget and a deficit of 213,000 dinars in the capital works budget. The accu-

mulated deficit as of Apr. 1, 1939, was estimated at over 850,000 dinars. General budget estimates for 1939-40 placed receipts at 5,860,000 dinars and expenditures at 5,875,630. At the beginning of 1939 the government received royalties from oil companies totaling 1,250,400 pounds sterling (gold). The public debt was unofficially estimated in May, 1939, at 2,752,000 dinars (dinar equals one pound sterling). In August a loan of £3,000,000 was obtained from the British Oil Development Co., in return for an amended concession; the loan was to be repaid, without interest, from excess annual oil royalties.

Communications. Completion in 1939 of the government railway from Mosul, Iraq, to Tel Kotchek, Syria, gave Iraq direct connections with Europe via Syria and Turkey. Construction of the Baiji-Mosul link was nearing completion. Total railway mileage (1938), 757 (excluding sidings); highways, 3885. A permanent bridge across the Tigris at Baghdad was opened in July, 1939, and another was under construction. Iraq's first national air service was opened in 1939. In addition Imperial Airways, Royal Dutch Air Lines, Air France, Lufthansa, Misr Air Lines (Egyptian), and the Iranian State Air Lines all crossed or entered Iraq; Baghdad and Basra are the chief airports.

History. King Ghazi (q.v.) was fatally injured in Baghdad on Apr. 3, 1939, when the automobile he was driving left the road and crashed into an electric light pole. He died on April 4. The cabinet immediately proclaimed the accession of Ghazi's infant son Feisal (born May 2, 1935) and named the boy's uncle, the Emir Abdul Ilah, as provisional regent. The Chamber of Deputies, which had been dissolved on February 23, was convoked in accordance with the Constitution and the Emir Abdul was confirmed as Regent by a joint session of the Chamber and Senate.

The death of the popular young King caused manifestations of great sorrow throughout the kingdom. In Mosul several hundred persons gathered for a public memorial service on April 4 were harangued by agitators who accused the British of assassinating the King. The infuriated mob stormed the British Consulate, killing the Consul, G. E. A. C. Monck-Mason, and burning the building. The Iraq Government made full reparation. In accordance with its treaty of alliance with Great Britain, Iraq severed diplomatic relations with Germany early in September. All Germans in Iraq were deported and the Regent in a telegram to King George expressed Iraq's "unshakable attachment" to the British alliance.

A conspiracy to overthrow the government formed on Dec. 26, 1938, by Gen. Nuri es-Said, was crushed early in March, 1939, by the arrest of former Premier Hikmet Beg Sulaiman and 50 army officers who participated in a barracks revolt. Death sentences were imposed on Hikmet and three of the officers, but they were commuted on March 18.

With the aid of an additional loan (see *Finance*), the government carried forward its modernization and development program. The Kut irrigation barrage, 300 miles up the Tigris from Basra, was completed in March after six years' work by a British firm. Work on other flood control and irrigation projects continued. Bids were issued for a government oil refinery. Further legislation was passed to encourage industrial development. Trade balancing measures were adopted with regard to countries having a favorable bal-

ance of trade with Iraq. A British firm was awarded a five-year monopoly on the exportation of dates. The metric system was introduced in Baghdad and the other chief centers July 24. A national bank, with the government owning 20 per cent of the stock, was provided for by law. Additional taxes were imposed on incomes, livestock and animal byproducts. Fifteen planes for the Iraq Air Force were ordered in the United States in August. On December 4 a £885,035 contract for construction of the "Habbaniyah escape," another barrage across the Euphrates, was signed by the Iraq Government and a British firm. On December 21 the Iraq Government contracted to sell Great Britain 200,000 tons of barley at a fixed price of 90s. a ton.

See PALESTINE under *History*.

IRELAND (EIRE). A self-governing unit of the British Commonwealth of Nations comprising 26 counties of southern Ireland. Capital, Dublin. Under the Anglo-Irish treaty of Dec. 6, 1921, the country was officially designated the Irish Free State. By virtue of the new Irish Constitution of 1937, the name was officially changed to "Ireland" in the English language and to "Eire" in the Irish language, effective Dec. 29, 1937. As used in the official sense in this article, Ireland excludes the six counties comprising Northern Ireland (q.v.).

Area and Population. The area is 26,601 square miles and the population was estimated at 2,934,000 on June 30, 1939, as compared with 2,965,854 at the 1936 census. The decline in population was attributed mainly to emigration to the United Kingdom. Living births in 1938 numbered 56,753 (19.3 per 1000); deaths, 40,066 (13.6 per 1000); marriages, 14,934 (5.1 per 1000). Overseas emigration declined from 20,802 in 1929 to 1751 in 1938. Populations of the chief cities in 1936 were: Dublin (Baile Atha Cliath) with suburbs, 467,691; Cork, 80,713; Limerick, 41,395; Waterford, 27,962.

National Defense. Military service is voluntary. The defense budget for the fiscal year ending Mar. 31, 1940, provided for expenditures of £3,252,199 (£1,718,565 in 1938-39). Standing army (1939): 724 officers, 7262 men.

Religion and Education. School attendance is compulsory and there is practically no illiteracy. Attendance at elementary schools (1937-38) was 474,113; at secondary schools (1938-39), 36,676; university enrollment (1937-38) was 5408. The institutions of higher education are Trinity College, Dublin, and the University of Ireland, with constituent colleges at Dublin, Cork, and Galway. According to the 1936 religious census, there were 2,773,920 Roman Catholics, 145,030 Episcopalians, 28,067 Presbyterians, 9649 Methodists, and 11,754 others.

Production. Agriculture, stock raising, manufacturing and fishing are the principal occupations. There were 3,605,000 acres of crops in 1938; 7,950,000 acres of grass and grazing; and 252,000 acres of forests. The value of agricultural production in 1936-37 was £47,318,000. Yields of the chief crops in 1938 were: Wheat, 7,398,000 bu.; rye, 53,000 bu.; barley, 5,142,000 bu.; oats, 39,133,000 bu.; potatoes, 91,872,000 bu.; turnips, 2,506,000 long tons; sugar beets, 416,000 long tons; beet sugar (1938-39), 60,000 long tons; mangels, 1,544,000 long tons; hay, 4,593,000 long tons; flax, 1,460,000 lb. In 1938 there were 4,056,000 cattle; 3,196,000 sheep; 958,000 swine; 442,000 horses; 161,000 mules and asses. The sea

fisheries yielded 17,880,240 lb. of fish, valued at £127,831, in 1938; value of shellfish, £24,898. The net value of industrial products in 1937 was £34,381,546. Production of electric power in the year ending Mar. 31, 1938, was 244,460,000 kilowatt-hours; malt liquor, 1,403,000 bbl.; distilled spirits, 2,225,000 proof gal.

Foreign Trade. General merchandise imports in 1938 were valued at £41,404,903 (£44,108,332 in 1937) and exports of Irish products were valued at £23,878,720 (£22,241,180 in 1937). Live-stock and foodstuffs accounted for 90 per cent of the exports. Of the exports, the United Kingdom took 93 per cent; Germany, 4 per cent. The United Kingdom led as a source of imports, supplying 50 per cent; the United States was second with £4,704,559, followed by India, Canada, Germany, Argentina, Belgium, and Australia in order, each of whom furnished goods valued at between £1,000,000 and £1,500,000. See IMPORTS AND EXPORTS.

Finance. For the fiscal year ending Mar. 31, 1939, actual revenues were £31,883,864 and expenditures £33,110,247, leaving a deficit of £1,226,383. Budget estimates for 1939-40 placed receipts at £32,454,000 and expenditures at £34,448,000. On Nov. 8, 1939, the Minister of Finance stated in the Dail that in consequence of the war in Europe, revenue would be lower by £1,620,000 than the original estimates. The gross debt on Mar. 31, 1939, was £61,438,000; net debt, £30,876,000. The Irish pound is convertible into the pound sterling. The average exchange value of the Irish £ was \$4.9440 in 1937, \$4.8894 in 1938, and \$4.4354 in 1939.

Transportation. The Irish railway system, including extensions into Northern Ireland, had 3774 miles of line and siding in 1938. During that year it carried 20,475,850 passengers and 3,299,762 tons of freight. Motor highways extended 5278 miles on Dec. 31, 1938 (see ROADS AND STREETS). During the calendar year 1938 Irish bus companies transported a total of 106,252,000 passengers (95,438,000 in 1937). In 1939 airlines linked Dublin with the Isle of Man, Bristol, Liverpool, and London. Navigable rivers and canals extended 650 miles. During 1938, 12,102 vessels of 9,774,000 net registered tons entered Ireland's ports in the foreign trade.

Government. Under the constitution proclaimed on Dec. 29, 1937, the government formerly called the Irish Free State took the name of Ireland (in Gaelic, Eire). The chief officer under this constitution is a President (in 1939, Dr. Douglas Hyde), elected by popular vote for a term of seven years; he summons and dissolves the Parliament, signs and promulgates laws, appoints judges, appoints a Prime Minister (in 1939, Eamon de Valera) nominated by the Dail and other ministers nominated by the Prime Minister, commands the armed forces, and may under certain conditions refer bills to the Supreme Court for opinion on their constitutionality, or to the popular vote for a referendum. Ireland is declared to be sovereign, free, and independent. The Oireachtas (Parliament) includes two houses: the Dail or House of Representatives (138 members) elected by adult suffrage in the respective constituencies; and the Seanad or Senate (60 members), chosen partly by the universities, chiefly by election on a vocational basis, and (to the number of 11) by nomination of the Prime Minister. The Senate may amend but not veto legislative proposals. The ministers, exercising the executive power, are responsible to the Dail. For other particulars see YEAR BOOK, 1938.

HISTORY

The Government's Course. Politically independent, responsive in some degree to a traditional antipathy toward Great Britain, Ireland remained dependent on the neighboring island for the greater part of its external commerce. A strong popular sentiment wished the annexation, by Ireland, of the northern counties that had, by the preference of a great part of their population, remained united with Great Britain, under the name of NORTHERN IRELAND (q.v.). A hidden association of unknown strength, the Irish Republican Army (I.R.A.) sought opportunity to bring about its purposes, not clearly known, by the use of violence against Northern Ireland, Great Britain, and the authorities of Ireland itself. Finally, at the outset of September, the entry of Great Britain into war with Germany further affected Irish-British relations. The general policy of the de Valera Government under these various circumstances was: to pursue, but by peaceable means only, the effort for the acquisition of Northern Ireland; to suppress lawlessness on the part of the I.R.A.; to maintain neutrality in the war between Great Britain and Germany; and to maintain the integrity of its coasts against belligerents' possible efforts to make use of them.

Conflict with the I.R.A. Trouble with the I.R.A. was an intermittent but chronic disturbance that kept up throughout the year. On May 31 the Parliament, at the instance of Premier de Valera, voted an Offenses Against the State Act, making treasonable actions or their concealment punishable by death, and allowing the detention of persons engaged in activities against the State. About 70 persons were taken into custody within the next few months; several of them, while confined, started hunger strikes in protest against their treatment. On December 1 and 2, in accordance with a decision of Justice Gavan Duffy of the High Court, denying the State's right to hold the men without arraignment, most of those under arrest were released. The Government, although liberating the prisoners, carried an appeal against the High Court's decision to the Supreme Court.

Soon after the liberation of the suspects the I.R.A. carried out its most ambitious enterprise of the year, a raid on the fortified and guarded magazine of the Irish Army, in Phoenix Park, Dublin. On the evening of December 23 a man in the uniform of the Irish army approached a sentry at the magazine; he carried a parcel addressed to the officer in command, purportedly a Christmas present. The gate was opened to admit the seeming messenger. Thereupon a party rushed in, out of the darkness, and overpowered the soldiers inside. Telephone wires from the magazine had been cut. The raiders brought up trucks and filled them with ammunition; several of these trucks got safely away. Outposts of the raiding party encountered a policeman in the park and fired at him, thus giving the alarm. Soldiers were brought up and captured four of the party.

The raiders took away 1,098,099 rounds of ammunition for small arms. They had less success at hiding them. Within the next week or so, according to an official statement, about 851,000 rounds of the ammunition were recovered by an active search. The finds were in a number of places scattered among counties between Dublin and the northern border. The government lost no time in preparing for passage, by the Parliament, of a new bill, to grant to the ministry, in somewhat

amended form, the power of detaining suspected terrorists.

Other offenses, apparently all committed by the I.R.A., in 1939 included a great number of bombings in England. Bombs were exploded in English public buildings, on bridges, and in the Christmas mails, without regard for who would suffer. A bomb explosion in Coventry, August 25, took the lives of five persons. Two men arrested for this act were tried at Birmingham, found guilty, and were sentenced to death, December 15; one of them, a laborer named Richards, avowed himself a member of the I.R.A. The sentence passed on the pair caused new agitations and anti-British acts both in Ireland and in Great Britain. Within independent Ireland evidence was found, October 1, of a plot to seize the six counties of Northern Ireland and of an alleged visit of Sean Russell, reputed head of the I.R.A., to the United States to get cash and arms. An effort was made, October 22, to blow up part of Mountjoy prison in Dublin, supposedly in order to help persons there confined to escape.

Relations with Great Britain. De Valera's Ministry, during the alarm over prospect of a British war with Germany because of the German invasion of Czecho-Slovakia, undertook to strengthen the means of defending Irish territory. Cannon received from Great Britain were placed for use against attack by air or by sea. De Valera, speaking at Ennis in April, declared the government's intention to make immediate preparations for defense, within the limits of the State's resources. The policy thus expressed implied, though it avoided stating, that Ireland would not lend itself to use by Germany against Great Britain. When war came at the outset of September, the government exchanged with the German diplomatic representative mutual assurances of neutrality, and diplomatic relations with Germany continued. The British naval forces received no special rights to use the Irish coast and were therefore to some extent handicapped in operating against German submarines.

The neutral position of Ireland appeared to some observers as an anomaly, in relation to its diminished but by no means wholly vacated place in the British "family of nations." War shut out Ireland from most of its trade with the United States and with Germany; the country thus became more than ever dependent on commerce with Great Britain. The British Government appointed its first representative to Ireland (as now constituted) at the end of September. It chose for the post Sir John Maffey, a veteran of the Indian civil service. He was to hold the rank of high commissioner.

The position of neutrality brought Ireland into strong contrast with the Union of South Africa, which ranged itself on the British side. The idea was expressed in current comment, however, that popular sentiment in favor of the British cause was far more general than the official position would indicate. It remained easy for citizens of Ireland to go to England and volunteer for military service, and considerable volunteering was thought by some to have occurred, the Irish Government raising no obstacle so long as British recruiting was not done on Irish soil.

The chief difficulty between Great Britain and Ireland in 1939 was that over the operations of the I.R.A. in England, already mentioned. De Valera was put in danger of seeming to foster a nest of unlawful, covert, and active hostility to the British nation. In England the Irish worker in-

curred suspicion and had difficulty in getting work. Numbers of the Irish in England were deported as suspects, many more came home having lost their livelihood, and all these swelled the rising number of the unemployed. The Cosgrave minority taxed de Valera with lack of real purpose to put down the I.R.A., while the sympathizers with the I.R.A. went so far as to threaten his life for his activity against suspected members.

Legislation. In addition to the act for suppression of offenses against the State, the Parliament approved the Ministry's policy of neutrality toward belligerents in the war with Germany and, September 9, granted emergency powers to the Minister of Finance to control matters relating to transactions in gold, securities, foreign exchange, and kindred dealings affecting exterior payments.

See CANADA and GREAT BRITAIN under *History*.

IRELAND, NORTHERN. An area, largely corresponding with the region of Ulster, in the north of Ireland; consists of six counties and two parliamentary boroughs; is integrally united with Great Britain. Capital, Belfast.

Area and Population. The area is 5237 square miles; population (census of Feb. 28, 1937) 1,279,753. Living births (1937) numbered 25,412 (19.8 per 1000); deaths, 19,282 (15.1 per 1000); marriages, 8623 (6.7 per 1000). The population of Belfast (1937) was 438,112; that of Londonderry, 47,804. A religious census taken in 1926 showed 420,428 Roman Catholics, 393,374 Presbyterians, 338,724 Protestant Episcopalians, 49,554 Methodists, and 54,481 of other faiths. Public elementary schools, at the end of 1937, numbered 1727 and had 194,347 pupils; preparatory, intermediate, and secondary schools, in the year 1937-38, numbered 73 and had 13,683 pupils. In 1936-37, 125 centers of technical instruction had 22,368 students. Queen's University at Belfast (1937-38) had 1592.

Production. The raising of livestock and the production from dairies contributed materially to the proceeds of agriculture. Livestock, Jan. 1, 1939, included 700,564 cattle, 551,262 sheep, 565,726 pigs, and 6,038,001 poultry. The harvest of potatoes, the chief food crop, yielded (1937) 867,979 tons. The crop of flax, in 1938, was 4036 tons. Other agricultural production (1937), in tons, included oats, 242,758; turnips, 482,307; hay, 833,396. The two principal manufacturing industries, linen-making and shipbuilding, employed respectively about 70,000 and 15,000 persons. Almost all the linen (value, 1937, £7,792,621) exported from the United Kingdom comes from Northern Ireland. The shipyards of Belfast can build more than 200,000 tons of ships a year. Statistics for the foreign trade of Northern Ireland are included in those for the United Kingdom.

Finance. The budget, as estimated for the fiscal year that ended with Mar. 31, 1939, included revenues of £15,922,000 and expenditures of £14,662,000. The greater part of taxation is imposed and collected by the British Imperial authority, but Northern Ireland had and exercises certain powers of taxation on its own account. Taxes collected in Northern Ireland contributed, in the fiscal year 1939, over £1,000,000 to the expenses of defense and other Imperial services.

Transportation. The total length of railway line is 741 miles. Canals total 180 miles. Highways, 13,043 miles. Shipping lines operate regularly between ports in Great Britain and those of Belfast and Londonderry. Other ports affording communication by sea are Newry, Larne, and Coleraine.

Government. Although an integral part of the United Kingdom and represented by 13 members in the British House of Commons, Northern Ireland exercises a degree of local autonomy, through a Parliament of its own and a cabinet responsible thereto. The Senate of this Parliament has 24 elected and 2 ex-officio members; the House of Commons has 52 members, all elected. The chief permanent officer is a Governor (since 1922, the Duke of Abercorn). The head of the cabinet is a Prime Minister (since 1931, Viscount Craigavon of Stormont).

History. The state of sentiment in Northern Ireland, toward the union sought by the neighboring state of Ireland, became increasingly adverse. The fact that the I.R.A. (see IRELAND, under *History*), carried out no acts of violence comparable to the attempts made against Northern Ireland in 1938, did nothing to mollify the opposition. The government of Northern Ireland held and exercised throughout 1939 the power of detaining without trial and of excluding from its territory persons accused of unlawful or subversive activity. Thirty-four men had been seized in December, 1938, on indication of their complicity in a plot against prominent members of the government. About 30 of them remained in confinement throughout 1939, and others apparently were arrested from time to time. Popular sentiment, or at least the audible part of it, was further antagonized by the I.R.A.'s bombings in England. Economic aspects also bore unfavorably on the idea of a union. The shipbuilding industry stood to gain considerably, at first from the British policy of rearmament and later from the need to replace vessels sunk by Germany after the start of the war. Agriculture enjoyed British subsidies that it would lose by Northern Ireland's parting company with Great Britain. Violence in the Londonderry jail on December 25—some 60 suspected members of the I.R.A. overcame jailers and held the jail for several hours against the police—afforded a reminder that the I.R.A. was but biding its time in Ulster. The government, during the year, increased the strength of the Royal Ulster Constabulary, of which the reserve force, subject to immediate call, was brought to 12,000. Five newspapers published in independent Ireland, the *Republican Congress*, *Wolfe Tone Weekly*, *Irish Freedom*, *Republic*, and *Sentry*, were excluded by government order at the end of the year.

Northern Ireland's part with Great Britain in the effort called forth by the advent of another war with Germany was subject to a peculiar circumstance. The British conscription act of 1939 specifically excepted the Province from liability to the military draft. Protests on behalf of the considerable part of the population thought to be disaffected to British sovereignty appeared to have brought about this exception; but all in Northern Ireland remained exempt, whatever their preferred allegiance. In the absence of a draft, recruiting was actively carried on in the six counties. The Duke of Abercorn, addressing the Parliament of Northern Ireland late in December, complimented the people on the number of the young men who had volunteered for service.

IRISH FREE STATE. See IRELAND (EIRE).
IRON AND STEEL. World production of steel ingots and castings in 1939, according to the annual review of the magazine *Steel*, is estimated at 134,983,000 gross tons, compared with 107,687,000 in 1938, a gain of 25 per cent. World production of pig iron and ferro-alloys was 100,-

418,000 gross tons. The corresponding production in 1938 was only 80,728,000 tons, indicating a gain of 24 per cent.

World steel production was undoubtedly spurred by war demands in Europe, and apparently rose to an all-time high. The accompanying table, compiled by *Steel*, gives the record.

WORLD IRON AND STEEL PRODUCTION

[Thousands of Gross Tons]

Country	Ingots and Castings		Pig Iron & Ferro-alloys	
	1939	1938	1939	1938
United States.....	47,533	28,693	31,943	19,161
Canada.....	1,300	1,156	800	758
Great Britain.....	13,500	10,398	8,200	6,761
France.....	8,400	6,087	7,800	5,964
Belgium.....	3,000	2,248	3,000	2,426
Luxemburg.....	1,800	1,414	1,750	1,526
Italy.....	2,350	2,286	1,000	913
Spain.....	500	465	500	435
Sweden.....	1,100	963	625	652
Germany *.....	24,000	22,922	20,000	18,300
Bohemia and Moravia.....	1,250	1,733	1,000	1,215
Poland.....	1,600	1,517	1,000	952
Hungary.....	750	638	450	330
Russia.....	18,500	18,150	15,000	14,479
Japan.....	6,300	6,000	3,250	3,000
India.....	1,000	966	1,800	1,634
Australia.....	1,200	1,151	1,100	1,072
Miscellaneous.....	900	900	1,200	1,150
World total.....	134,983	107,687	100,418	80,728

* Includes Austria and Saar. * Includes Manchuria and Korea.

Steel ingot production in the United States rose to an all-time high rate in the fourth quarter of 1939, according to statistics compiled by the American Iron & Steel Institute. The average rate of operations, in terms of per cent of capacity, for the four quarters of the year was: 54.5, 50.8, 62.2, and 91.2. The highest rate for any week in the history of the industry was 94.4 per cent for the week beginning November 27. Output for 1939 was estimated at 46,800,000 tons, compared with 28,200,000 in 1938 and 50,318,000 tons in 1937. The share of the United States in world production of steel was about 35 per cent as against 27 per cent in 1938.

Iron and steel exports from the United States, exclusive of scrap, rose in 1939, according to *Steel*, to 2,250,000 gross tons, compared with 2,149,000 tons in 1938, but still far below the record of 3,472,000 tons in 1937.

Principal causes for the sharp rise in domestic production were: replenishment of producers' stocks of steel which had become subnormal; increased volume of automobile production in the last quarter of the year; and the unexpectedly large increase in demand from railroads. The European war exerted only an indirect and minor influence on domestic production. See BUSINESS REVIEW.

Average employment for 1939 was 482,000 with a peak of 545,000. Average weekly earnings rose to \$32 in October, a gain of \$8 over mid-summer. Average working hours were 38, with hourly earnings of 84 cents, highest in the history of the industry. Payrolls in 1939 totalled \$810,000,000 compared with \$600,000,000 in 1938.

Thirty-three steel rolling mills were completed in the United States in 1939; one new open-hearth furnace was built; three iron blast furnaces were remodeled, and four dismantled.

The domestic iron and steel scrap industry in 1939 had the fourth best year in its history with respect to domestic consumption and second best in export. Domestic consumption, estimated by *Iron Age* at 34,800,000 gross tons, was exceeded

only in 1937, 1936, and 1929. It showed an increase of 62 per cent over 1938. Of the 1939 domestic consumption about 70 per cent went into the production of new steel, 20 per cent into castings, and 10 per cent for miscellaneous uses. Exports were about 3,500,000 tons, compared with 2,998,591 tons in 1938, and the record of 4,092,590 tons in 1937.

H. C. PARMELEE.

IRON AND STEEL INSTITUTE, AMERICAN. Prominent among the Institute's activities in 1939 was the publication of books and pamphlets. Most of the publications, such as the statistics of iron and steel production, the account of the general meeting of the Institute, sections of the *Steel Products Manual*, and the periodical, *Steel Facts*, represented continuations of series. New publications included booklets relating to the investment and corporate earnings of the industry and to the use of steel in agriculture.

The Institute likewise continued during the year its work of compiling and publishing a series of freight tariffs showing freight rates on iron and steel products from important origin points to principal destinations. Another important activity was the providing of accurate information relative to the industry. Thousands of inquiries from editors, writers, students and the public generally were answered by members of the Institute staff during the course of the year.

Officers of the Institute currently are: E. T. Weir, President; B. F. Fairless and Frank Purnell, Vice Presidents; H. L. Hughes, Treasurer; and Walter S. Tower, Executive Secretary. Headquarters are at 350 Fifth Avenue, New York City.

IRON ORE. Shipments of Lake Superior iron ore from upper Lake ports in 1939 aggregated 45,072,724 gross tons, of which 45,002,085 tons were delivered at U.S. ports and the remainder to Canada, according to the Lake Superior Iron Ore Association. Increase over 1938 shipments was 134 per cent, but the tonnage fell far below the all-time high record of 65,205,000 tons in 1929, and the next peak of 62,598,836 tons in 1937. Furnace consumption of iron ore was estimated at 44,000,000 tons, compared with 19,512,277 tons for 1938. Stocks on hand, gross tons, were as follows:

	At furnaces	Lake Erie docks	Total
Nov. 1, 1939.....	33,943,773	5,120,884	39,064,657
Nov. 1, 1938.....	33,172,565	5,421,004	38,593,569

Total output of iron ore in the United States in 1939 is estimated by the Bureau of Mines at 51,830,000 gross tons, an increase of 82 per cent over mined production of 1938. Total shipments for 1939 are estimated at 54,825,000 gross tons, valued at \$159,066,000, representing an increase of 107 per cent in quantity and 114 per cent in total value compared with 1938.

H. C. PARMELEE.

IRRIGATION. See RECLAMATION, BUREAU OF; SOILS; IRAQ under *History*.

ISLE OF MAN. See GREAT BRITAIN.

ISLE OF PINES. See NEW CALEDONIA.

ISOTOPES. See CHEMISTRY.

ITALIAN EAST AFRICA. An Italian Colony in East Africa established by the decree of June 1, 1936, which merged the colonies of Eritrea and Italian Somaliland with the newly conquered empire of Ethiopia. Capital, Addis Ababa. The

area and population of Italian East Africa by provinces, according to official Italian estimates of May, 1939, are shown in the accompanying table.

ITALIAN EAST AFRICA: AREA AND POPULATION

<i>Province (Capital)</i>	<i>Sq. Miles</i>	<i>Population</i>
Eritrea * (Asmara)	89,300	1,500,000
Somaliland * (Mogadiscio)	247,040	1,150,000
Harar (Harar)	79,865	1,600,000
Shoa * (Addis Ababa)	224,790	7,850,000
Total	640,995	12,100,000

* Eritrea and Somaliland are not co-terminous with the former colonies; they include parts of Ethiopia (see map in 1936 YEAR BOOK, p. 240, for the former provincial boundaries). * By a decree of Sept. 1, 1938, the Italian Government merged the provinces (governments) of Amhara, and of Galla and Sidamo with the administrative district of Addis Ababa to form the province of Shoa.

Estimated populations of the chief cities in 1937 were: Addis Ababa, 150,000; Harar, 50,000; Dire Dawa, 30,000; Asmara, 23,000; Mogadiscio, 21,000; Massaua, 15,000; Gondar, 6000; Dessye, 5000. The number of Italians in Italian East Africa in 1939 was reported at 200,000, chiefly road workers, troops, and officials. The native population includes some 2,000,000 Amharas, the former rulers of Ethiopia, who are Coptic Christians; more than 3,000,000 Gallas, who are part Christian, part Mohammedan, and part pagan; and the Danakil, Somalis, and numerous other tribes, mostly Mohammedan or pagan. The official languages are Italian, Amharic, Arabic, and Tigrinish.

Religion and Education. The ancient connection between the Ethiopian and Egyptian Coptic churches was broken on Dec. 1, 1937, when the Viceroy declared the Ethiopian Church autocephalous and appointed the Abuna (patriarch) and bishops for all of Italian East Africa. The Italian authorities have adopted a policy favorable to both Roman Catholic and Mohammedan religious activities and adverse to Protestant missionary projects in Ethiopia at the time of the conquest.

Education was entrusted to the Italian Fascist party, which established primary schools in the principal occupied cities. In 1938-39 there were 157 elementary schools, with 15,668 pupils (11,623 natives, 3908 Italians, 137 others), and 9 secondary schools, with 1515 pupils (1497 Italians).

Production. Stock raising and primitive agriculture are the chief occupations. Cultivated and wild coffee (exports, 13,000 metric tons in 1937-38), cotton, sugar, flax, bananas, dates, grapes, cereals, tobacco, fruits, and vegetables are grown in small quantities. Agricultural produce is grown for export on some foreign plantations using native labor. Gold, platinum and potash are the only minerals produced in commercial quantities. A 1939 census showed 4007 industrial firms in Italian East Africa with an invested capital of about 2,700,000,000 lire, and 4785 commercial firms (capital, 1,100,000,000 lire), most of them in Eritrea. The Rome Government placed the total Italian investment in Ethiopia at 5,000,000,000 lire in October, 1939.

Foreign Trade. Imports in 1938 totaled 2,447,057,000 lire (2,062,038,000 from Italy) and exports were 191,877,000 lire (114,845,000 to Italy). The lire exchanged at \$0.0526 in 1938.

Finance. The budget for the fiscal year ended June 30, 1939, balanced at 1,591,128,542 lire. Estimated revenues included 402,000,000 lire of ordinary receipts, 1,000,000,000 lire contributed by

Italian treasury, and 179,128,000 lire of special receipts. Total military expenditures were placed at 632,967,000 lire. These budget figures exclude an extraordinary contribution of 12,000,000,000 lire made by the Italian Government, beginning in 1938, for public works and equipment.

Communications. The chief railway is the narrow-gauge French-owned line from Djibouti in French Somaliland to Addis Ababa (486 miles). Another line links Massaua-Asmara-Cheren-Agordat-Bisceia. Roads of all kinds totaled about 12,297 miles (1938), of which about 2200 miles were newly built motor highways. Air lines link Asmara, the chief aviation center, with Addis Ababa, Mogadiscio, Jimma, and Gondar; and with Rome via Cairo. Another line links Assab, Djibouti, and Dire Dawa. Early in 1939, it was reported that military planes in Italian East Africa were making 34 flights weekly to maintain communication with distant outposts. Three plants for the rebuilding and alteration of airplanes and motors were in operation. The chief ports are Massaua and Assab on the Red Sea and Mogadiscio, Merca, and Chisimaio on the Indian Ocean. Port facilities at all these points have recently been improved. Four fast steamship lines connect them with Italy.

Government. The colony is administered by a Viceroy and Governor-General at Addis Ababa, assisted by a Vice Governor General, a Chief of Staff, a consultative Council of Government composed of high government officials, and the governors of the four provinces (governments). There is also a Board of Consultants representing the white colonists and native chieftains. Viceroy in 1939, the Duke of Aosta (appointed Nov. 20, 1937).

History. Little news as to actual conditions in the former Ethiopian Empire seeped through the Italian censorship in 1939. Italian authorities at Addis Ababa reported steady progress in consolidating Italian control and the construction of highways and other public works essential to the economic exploitation of the conquest. In March they announced that in connection with the general reconstruction of Addis Ababa about \$5,260,000 had been appropriated for new residences and office buildings, \$2,104,000 for streets and other works, and additional funds for 2000 workmen's apartments. Other public works announced as under way were a new hospital for Europeans, an aqueduct, and the Giren-Addis Ababa highway, etc.

However the French writer, Jerome Thauraud, who returned to Paris early in 1939 from a visit to Djibouti, reported that the Italian venture in Ethiopia was not prospering, that the Italians had alienated the natives by their administrative and other methods, and had not been able to extend their control beyond the principal cities and a few strategic centers. Guerrilla bands were still active in various parts of the country. In April reports reached Djibouti that the Mojjo station of the Djibouti-Addis Ababa railway, 45 miles from the capital, had been raided and plundered by a native band, which killed members of the Italian garrison.

Few Italian colonists entered Ethiopia during the year, but in September and October the foreign colony was expelled by the Italian authorities. Among those leaving were the staff of the American hospital at Addis Ababa, which was confiscated. Plans announced during the first part of the year for the establishment of extensive plantations with Dutch capital and for the settle-

ment of numerous Jewish refugees in the Lake Tana region were set back by the outbreak of the European war. In August the Duke of Aosta went to Rome to confer with Premier Mussolini concerning Ethiopian military problems, and particularly the defense of the empire in the event of Italy's involvement in a European conflict.

Negotiations for the delimitation of the Italian East African frontiers with the Anglo-Egyptian Sudan and with the British colonies in East Africa were opened with the Italian Foreign Office by British and Egyptian representatives in Rome on March 22.

ITALIAN LITERATURE. The literary season, in view of extraordinary European events, feverishness, nerves, and finally the war, had to be relegated, perforce, to a remote background. In Italy particularly the past few seasons have kept professional men in a constant state of excitement, indecision, and, to an extent, unproductiveness. In consequence, the past few years may not go down as ones of literary achievements and innovations. Rather they are doomed to forfeit their place to the department of history. The Ethiopian campaign of several seasons back presaged a calming down of national emotions, and it seemed that our Italian literati could look again to meditation and creation. Not so, however, as the Albanian episode came like flash and thunderbolt to occupy the Italian mind. The past season, culminating with the second World War, seemed destined to strike a fatal blow to all creative ability. And yet Italy produced, if not in quantity, at least in quality. Despite all these disturbing factors our Italian authors, admirably, and with Olympian calm, contributed sizably to the European literary output of 1939.

A new political, literary, and artistic review made its appearance in Rome in the early part of 1939. *Panorama* came out on the 12th and 27th of each month. The editors' plans called for 3300 pages on varied and pertinent subjects, interspersed generously with 4000 illustrations. Though the review is not comparable artistically and otherwise with the now defunct *Pegaso*, it bids fair to take its place. Let us hope that the vitality and freshness which accompanies the first issues of these reviews will continue, and especially let us augur its survival.

Fiction. A novel of importance was produced by Giuseppe Grio, a newcomer in the field of literature. The author has not yet been included in contemporary bibliographies. *La morte di un uomo* (*The Death of a Man*; Vallecchi, Florence) is a novel worked out on large canvas and broad strokes. The subject matter is concerned almost exclusively with a court trial—692 pages in all; yet let no one say that a single chapter lags in interest and intensity! In straightforward language the author has depicted the intricacies of the function of a court of justice. It is a trial for murder, and the life of a precociously intelligent young man hangs in a balance. Gino, the accused, is also the protagonist of the novel. Though evidence is heavily against him, Gino defends himself admirably. Whether he is guilty or not, the author has deftly hidden from us. The greatest criminal lawyer of Italy comes to Gino's defense, and before the lucidity and adroitness of his client it would have been well to take a few lessons in logic, for Gino possessed an orderly and philosophic mind. It must be recalled that this young man had literary aspirations and had already given evidence of genius. Gino, after setting forth an

eloquent and courageous defense, succumbs in despair before the sluggish and hopeless function of his trial. He confesses the guilt as put forth by the prosecution, but there lurks more than ever in the reader's mind the possibility and plausibility of his innocence. The author has bewitched everyone, judge, barrister, and the spectator. Though this novel has not presented a new theme, it contains a powerful and convincing thesis on the pitfalls and the uncertainty of law decisions. In conclusion, let it be said that this novel, if not on a great literary plane, offers much material for reflection.

The simplicity and directness of the foregoing narrative is in sharp contrast with Bino Sanminiati's *Fiamme a Monteluce* (*Flames at Monteluce*; Vallecchi, Florence), his third novel. It is a creation couched in finesse and stylistic idiom. Sanminiati bids fair to occupy an enviable place in contemporary Italian letters. This novel, as the editors' notes indicate, covers a period of twenty years and three generations. The heroines are several ladyships of Monteluce, residing in an old palace near Siena. Several heroes take part in the novel. One, the marquis, Giulio Ardighi, is a sceptic and vitriolic soul, though not devoid of fine qualities and cultured in the humanities. The other is his son, whose ideas, ambitions, and moral convictions are in sharp contrast with those of his father. It is a struggle of two epochs: the father in fear of reality hides behind his scepticism and paradox; the son emerges victoriously from ideals too vast and scattered and finds orientation in the love of his lady and that of the hearth. New life and a revitalized family arise from this luxury and decadent culture. Such is the theme of the novel. Let it be recalled that Bino Sanminiati made considerable success in the past seasons with his volumes of short stories, *Crazy Sheep* (*Pecore Pazze*), *Bocca Mariana*, *Il mondo dei Mustafà*, and *Notte di baldoria* (*Nights of Revelry*).

Lucio D'Ambra continued in debonair entertainment his trilogies. This time it was a novel dedicated to Italian aviation, *La guardia del cielo* (*The Sentinel of the Sky*; Mondadori, Milan). Presenting a rather exhaustive review of aviation with a romanticized treatment, the novel borders on a quasi-nationalistic theme. The moral lesson to be derived lies in the transformation of human beings into heroes of the fatherland: "Ed ecco l'alto insegnamento morale del romanzo, dove lo spirito riesce a piegare la materia e a trasformare il mortale nell'eroe che è eterno nel cielo della gloria. In questo particolare momento storico, nessuno poteva colla penna portare un più alto servizio alla Patria nostra."

Piero Genovesi published his second novel, *Capelli rossi* (*Red Hair*; Ceschina). He treats here the adolescence of Daniele in a psychological and illuminating fashion. It is the story of a post-war orphan who all but "messes up" his life for the lack of guidance, family affection, and understanding. The author sees only pessimism and futility for this type of youth, who sooner or later must fall into delinquency. There is an interlineal appeal for a *mens sana in corpore sano*, proper education, and upbringing to offset the inevitable tragedy preying on this sort of youngster. For a history of the Italian novel one can look to Astaldi Maria Luisa's *Nascita e vicende del romanzo italiano* (*The Birth and Vicissitudes of the Italian Novel* brought out by the publisher, Aldo Garzanti, successor to the time-honored house of Fratelli Treves of Milan).

Two volumes of short stories could be recorded—*La Terra (The Earth)*; Mondadori, Milan) by Angelo Gatti of the Italian Academy, and *Il Taciturno* (Mondadori, Milan) by Raffaele Calzini. Both volumes are by two men distinguished in Italian literature. The first volume "represents peasants of a district in Piedmont. There are not many left of this sturdy stock who are off the beaten path, toiling all day long and frequently also the nights. There are no gentlemen tourists about them, not even in summer time. They are depicted as tenaciously retaining the simple and potent characteristics of their primitive origin. Among them can be found some who live and speak with the sagacity of Socrates, who fight and die as Ajax. They give one a sense of indestructibility and eternity." Calzini's volume reaches over the international horizon for its subject matter, for in these stories of human interest are to be found the Chinaman, Koo, Old Mr. Berder, and corporal Gaffuri.

Poetry. Aldo Capasso has continued his productivity in poetry since his volume *Passo del Cigno* gained the Fracchia Prize in 1931. His fame is shared along with Govoni, Montale, Ungaretti, among the foremost Italian poets of today. His recent volume, *Diciassette Poesie (Seventeen Poems)*; Collezione Poeti d'oggi) received considerable comment, and in this regard the critic, Ferdinando Garibaldi, has stated succinctly that Capasso is essentially a classicist as regards form, though is imbued with subtle and rich romantic sensibilities. His poetry is powerful and dramatic, containing a strange admixture of pessimism and optimism at the same time. In France he has been mentioned on the plane of Vigny, Valéry, and Claudel. Incidentally, Capasso found time to bring forth two studies, *Tre saggi sulla poesia italiana del Rinascimento* (Emiliano degli Orfini, Genoa), three essays on Boiardo, Lorenzo, and Ariosto, and *Il Tassino-L'aurora di Torquato Tasso 1544-1565* (Ed. Dante Alighieri, Genoa).

Four volumes of poetry were all published by the editors Guanda of Modena. In this collection the first was Ornella Puglisi's *La fiamma consuma (The Flame Consumes)*. Contrary to what the title may suggest all these poems are couched in suave and peaceful moods. There is a dominant melodic line throughout and the coloration is that of an eternal aurora of spring. Franco Allegretti's small volume, *Avevo scoperto il fuoco* are poems in stylistic language over the grief of a lost love. "His feeling for nature is strong; his pictorial sense is sufficiently developed, and yet he has not attained a poetic attitude and essence." Cesare Fabrizi called the third volume of this series, *Ebe*. The theme of his verse is his restless and dreamy soul. There is a certain amount of vitality and freshness that accompanies these compositions. The fourth volume in this same collection was Mariano Rosati's *Liriche* poems along the traditional path: his preference lies in the images that nature furnishes to the eye and to the soul. His verse is sound and frequently attains the grandiose.

Among the comparatively new names in contemporary Italian poetry appeared that of Ferdinando Visconti. His volume, *Incontro all'estate (Encounter with the Summer)*; Ed. Testa, Bologna) was discussed at length in the columns of *Meridiano di Roma*. Praise and encouragement went to the author. He was congratulated for his art and dignity. His only preoccupation seemed to be to compose verse for the joy of poetry and let art and esthetics take care of themselves! Mean-

while, one will await his next volume before formulating a more conclusive opinion of his work. The editor, Nicola Zanichelli of Bologna brought forth several volumes in his Collection of the Poets of Rome, the *Satires and Epistles of Horace* translated and annotated by Ettore Romagnoli, and *The Metamorphosis of Ovid* translated in two volumes by Ferruccio Bernini. The collection includes the poetry of Catullo, Lucrezio, Marziale, Orazio, Ovidio, Plauto, Terenzio, Tibullo, and Virgilio. An especial feature of the texts is the translation which accompanies each page. The editor is to be congratulated for having enlisted the services of the leading scholars of Italy for the preparation of these volumes.

Criticism and Varia. The publishing house of Paravia (Turin) brought out five volumes in the series *Scrittori italiani (Italian Writers)*. The minor works of Dante, *Le opere minori* were prepared by Teresio Grossi. Umberto Renda prepared essays on Boccaccio. Carducci was treated by Antonio Lantrua. Foscolo was entrusted to Alberto Viviani. The texts are copiously annotated. The volumes which sell for five lire should have a wide circulation and should be of utmost benefit to students of history and literature. Giuseppe Guido Ferrero re-edited *L'anima e la poesia di Vittorio Alfieri* (Paravia, Turin), a volume of some 370 pages which treats the great dramatist from the historic and philosophic point of view. A romanticized biography of history's fascinating blond, Lucrezia Borgia, the daughter of the pope, Rodrigo Borgia, was prepared by Maria Bellonci. In historic vein, the biography attains literary qualities beyond the ordinary. While we are on the premise of history, mention could be made of Gino Damerini's volume, *Settecento veneziano (Eighteenth Century Venice)*; Mondadori, Milan), an admirable study with over a hundred unedited letters of Caterina Dolfin Tron. The much discussed biography of Giorgio Pini's *Benito Mussolini*, which appeared several seasons ago and was subsequently used as a text in schools, was brought up to date and republished by the author (Licinio Cappelli, Bologna). Lastly, could be recorded two volumes in English, *Leonardo da Vinci, An Account of his Development as an Artist* by Sir Kenneth Clark, published by Macmillan Co., a book of 201 pages and 68 illustrations. The other volume is Richard Winston's translation of Valeriu Marcu's *Accent on Power, The Life and Times of Machiavelli* (Farrar & Rinehart, New York). (Acknowledgment is hereby made to the *Meridiano di Roma* for notes and bibliographical information.)

O. A. BONTEMPO.

ITALIAN SOMALILAND. See ITALIAN EAST AFRICA.

ITALY. A kingdom of southern Europe, upon which a Fascist dictatorship is superimposed. Capital, Rome. Sovereign in 1939, King Victor Emmanuel III, who ascended the throne July 29, 1900.

Area and Population. Excluding Libya (q.v.), which became part of Italian national territory in 1938 and Albania (q.v.), which was annexed in 1939, Italy has an area of 119,714 square miles and a population estimated at 44,304,000 on Sept. 30, 1939 (42,444,588 at the 1936 census, which did not include 528,542 workers and soldiers in Africa). The 1936 census showed 31,735,027 urban and 11,258,575 rural residents. Of the population 10 years old or over, 47.7 per cent was agricul-

tural. Living births in 1938 numbered 1,037,180 (23.6 per 1000); deaths, 612,223 (13.9 per 1000); marriages, 324,843 (7.4 per 1000). Emigrants in 1937 numbered 59,945; emigrants who returned to Italy totaled 35,741. Foreigners in Italy at the 1936 census numbered 108,597 as compared with an estimated 9,600,000 Italians living in other countries.

The city of Rome had an estimated population of 1,327,126 on Dec. 31, 1939. Other chief cities with the estimated number of inhabitants on Dec. 31, 1938 (not including workmen and soldiers absent in Africa and the Dodecanese), were: Milan (Milano), 1,205,542; Naples (Napoli), 920,460; Turin (Torino), 690,015; Genoa (Genova), 654,211; Palermo, 431,666; Florence (Firenze), 351,055; Bologna, 315,158; Venice (Venezia), 283,926; Trieste, 258,612; Catania, 251,978; Bari, 210,777; Messina, 202,375; Verona, 166,315; Padua (Padova), 150,203; Taranto, 151,150; Leghorn (Livorno), 134,545; Brescia, 134,340; Ferrara, 122,913; Reggio di Calabria, 121,876; Cagliari, 119,934; La Spezia, 119,067.

National Defense. Service in the army (or navy) is compulsory and universal. The active army on Nov. 1, 1939 (according to the Adjutant General's Office, Washington, D. C.), numbered 2,240,000 men, with 5,175,000 trained reserves. The air force comprised 116,000 men plus 102,000 reservists and 3000 aircraft. The Office of Chief of Naval Operations, Washington, D. C., reported that on Oct. 1, 1939, the Italian navy consisted of 4 battleships aggregating 94,488 tons, 1 old armored cruiser, 5 monitors, 19 cruisers, 98 destroyers, 1 patrol gunboat, 1 submarine chaser, and 98 submarines. At the beginning of 1939 the personnel of the navy was 4143 officers and 70,500 men. See MILITARY PROGRESS; NAVAL PROGRESS.

Colonial Empire. The total area of Italy's colonies and dependencies (including Albania and all of Libya) is 1,279,589 square miles; total population (1938 estimate), 9,711,000. They are treated elsewhere in the YEAR BOOK under the following individual headings: AEGEAN ISLANDS, ITALIAN; ALBANIA; ITALIAN EAST AFRICA AND LIBYA.

Education and Religion. School enrollment in 1936-37 was: Elementary, 5,163,596; secondary, 1,038,238; higher education, 72,944. According to the 1931 census 79 per cent of persons over six years of age were able to read. There were 41,014,096 Roman Catholics (99.6 per cent of the population), 83,618 Protestants, and 47,825 Jews in the 1931 census. See EDUCATION.

Production. About 46.3 per cent of the working population is engaged in agriculture and fishing, 30.4 per cent in mining, quarrying and industry, 8.3 per cent in commerce, and 4.6 per cent in transportation. Yields of the chief cereals in 1939 (in metric tons) were: Barley, 245,400; rye, 151,500; oats, 586,800; wheat (1938), 8,091,800; corn (1938), 2,934,300. The production of other leading crops in 1938 was: Rice, 37,822,000 bu.; potatoes, 108,356,000 bu.; sugar beets, 3,253,000 metric tons; beet sugar (1938-39), 398,000 metric tons; olive oil (1938-39), 47,684,000 gal.; wine, 1,093,703,000 gal.; citrus fruits, 835,000 metric tons; tobacco, 90,451,000 lb.; tomatoes, 2,086,654,000 lb.; cocoons, 44,028,000 lb. The 1938 livestock statistics showed 7,667,000 cattle; 9,467,000 sheep; 2,940,000 swine; 1,828,000 goats; 791,000 horses; 1,228,000 mules and asses.

Mineral production in 1938 was valued at 895,259,000 lire (775,184,000 in 1937); quarry output, 424,600,000 lire (394,380,000 in 1937). Mineral and

metallurgical production in 1938 was (in metric tons): Iron ore, 990,043; lead ore, 67,493; zinc ore, 200,848; iron pyrites, 930,312; lignite, 1,348,031; sulphur (crude) 397,155; asphaltic and bituminous rock, 258,047; marble, 457,222; marine salt, 883,420; bauxite, 360,837; metallic mercury, 2301; aluminum, 25,767; lead, 48,412; tin, 486; pig iron, 864,536; steel ingots and castings, 2,307,403; ferro-alloys, 64,311; metallurgical coke, 1,739,417; cement, 4,607,554. The capitalization of Italian manufacturing industries on Dec. 31, 1938, was 53,129,000,000 lire. The output of raw silk in 1938 was 6,029,000 lb.; rayon and other artificial fibers, 278,913,000 lb.; cotton yarn, 393,395,000 lb.; cotton cloth, 969,274,000 yd. The hydro-electric plant capacity in January, 1939, was 3,961,000 kilowatts; the output in 1938 was 14,298,000,000 kilowatt-hours. Motor vehicles manufactured in 1938 totaled 58,974 automobiles and 10,144 trucks and buses. Woolen textiles, chemicals, sulphuric acid, superphosphate, copper sulphate, cheese, and macaroni are other important manufactures.

Foreign Trade. Total imports for 1938 (excluding precious metals) were valued at 10,918,000,000 lire (13,942,100,000 in 1937) and exports at 7,959,000,000 (10,433,600,000 in 1937). Imports were chiefly from the following countries: Germany, 2,981,010,000 lire; the United States, 1,315,712,000; Great Britain, 703,047,000; Switzerland, 373,325,000; Poland, 313,573,000; Rumania, 251,970,000; France, 247,571,000. The distribution of exports was: Germany, 1,983,312,000 lire; United States, 773,518,000; Great Britain, 580,180,000; Switzerland, 489,348,000; France, 321,783,000; Yugoslavia, 219,186,000. The chief exports were cotton fabrics, automobiles, rayon and other artificial fibers, wool fabrics, chemicals, medicines, paints, lemons. See IMPORTS AND EXPORTS.

Finance. Actual receipts for the fiscal year ending June 30, 1938, were 28,362,000,000 lire; expenditures were 40,923,000,000 lire. Budget estimates for 1938-39 showed revenue of 25,072,000,000 and expenditure of 25,035,000,000 lire (24,561,000,000 and 29,319,000,000, respectively, for 1939-40). A decree published Dec. 4, 1939, appropriated an additional 1,000,000,000 lire for expenses growing out of the international situation. There were also supplementary appropriations in October totaling 358,700,000 lire. These added expenditures increased the probable deficit for 1939-40 to 4,755,000,000 lire.

No statement of the public debt has been published since that of Aug. 31, 1935, showed a total debt of 107,185,000,000 lire (funded, 93,827,000,000; floating, 13,358,000,000). Governmental deficits totaled about 54,879,000,000 for the fiscal years from 1935 to 1939 inclusive. To meet the deficiencies the government (up to Mar. 31, 1939) had obtained 14,182,000,000 lire through 5 per cent loans; and 12,803,000,000 through the issuance of new treasury notes. Central monetary gold reserves on Sept. 30, 1939, totaled approximately \$114,000,000 (old gold dollars). The average exchange value of the lira was \$0.0526 in both 1937 and 1938, \$0.0520 in 1939.

Transportation. At the beginning of 1939, Italy had 14,448 miles of railway line (state, 10,551; private, 3897). For the year ended June 30, 1938, the government lines carried 71,109,000 passengers and 50,285,000 metric tons of freight, the gross receipts totaling 4,181,000,000 lire. The mileage of roads and highways in 1939 was 113,906 (See ROADS AND STREETS). Statistics of civil aviation

for 1938 were: Miles flown, 8,447,000; passengers carried, 142,604; mail carried, 1,059,000 lb.; newspapers, 659,000 lb.; baggage, 4,645,000 lb.; merchandise, 1,258,000 lb. A new transatlantic air service between Rome and Rio de Janeiro, Brazil, was inaugurated on Dec. 21, 1939. The Italian merchant marine on June 30, 1938, comprised 1293 vessels of 3,290,484 gross tons. The gross tonnage launched in the year ending June 30, 1939, totaled 89,300. During 1939, 12,119 vessels of 22,816,000 net register tons entered Italian ports in the foreign trade.

Government. The Fascist regime has been superimposed upon the constitutional monarchy established by the Constitution of Mar. 4, 1848. Under the law of Dec. 9, 1928, the Fascist Grand Council, consisting of (1) life, (2) ex-officio, and (3) extraordinary members, acts as "the supreme organ co-ordinating and uniting all the activities of the regime." The life members (three in 1939) are the Quadrumvirs of the March on Rome. Members in the other two categories are all appointed by the Head of the Government (Benito Mussolini).

Parliament consists of a Senate (535 members in 1939), all appointed for life by the King on nomination by the Head of the Government, and a Chamber of Fasci and Corporations, which on Mar. 23, 1939, replaced the Chamber of Deputies provided for in the 1848 Constitution. The Chamber of Fasci and Corporations is composed of about 700 National Councillors, who hold their seats by virtue of membership in The Fascist Grand Council, the National Council of the Fascist party, and the National Council of Corporations. By the law of Oct. 7, 1938, both the new Chamber and Senate were restricted to voting by a show of hands or by acclamation, instead of the former secret ballot, on measures presented to them by the Head of the Government or on measures the discussion of which had been previously authorized by him. For the cabinet as constituted at the beginning of 1939, see 1938 YEAR BOOK, p. 359. For changes in 1939, see below under *History*.

HISTORY

Foreign Relations. Under Benito Mussolini's resolute guidance, Italy during 1939 pressed steadily toward her goal of domination of the Mediterranean, the breaking of the Anglo-French stranglehold on the Straits of Gibraltar and the Suez Canal, territorial expansion in Africa, and the defense of her economic and diplomatic position in the Balkans and the Danube basin. With Hitler's collaboration, this campaign registered substantial progress. Italo-German intervention in Spain (q.v.) made possible the victory of Gen. Francisco Franco's insurgent government and opened the way for a possible alliance between the Fascist governments of Italy and Spain. The conquest of Albania (q.v.) in April gave Italy a base of operations in the Balkans, and made the Adriatic more than ever an Italian lake.

On May 22 the Rome-Berlin axis of 1936 was converted into an offensive and defensive military alliance, designed to overturn the European *status quo* established by the Versailles and other World War peace treaties and to provide additional "living space" for the two allies. But the fruits that Mussolini expected from this alliance were not immediately forthcoming. France and Britain were not intimidated by the joint German-Italian threat. They firmly refused to grant Italian demands for Malta, Tunisia, Djibouti, and a dominant voice in

the management of the Suez Canal (see FRANCE under *History*). At the same time they constructed a powerful coalition of anti-axis powers, which, together with their own rapidly increasing armaments, placed Italy in a dangerously exposed position.

Italy and Spain. Physical exhaustion in Spain, coupled with the power of the Anglo-French coalition, balked Mussolini's efforts to bind Spain to Italy through a military alliance. Count Ciano, Mussolini's son-in-law and Foreign Minister, returned empty-handed from his visit to Spain in July, despite the claims on General Franco's gratitude made by the Italian press in June. It was then officially proclaimed that Mussolini had intervened in Spain with naval, air, and military forces from the outset of the Franco revolt beginning in July, 1936. The final Italian casualty lists in Spain, published October 2, placed the killed at about 4000 and the wounded at 15,000.

Non-belligerency. Meanwhile the rapid expansion of German military power and of Nazi political and economic influence in the Balkans, the Danubian basin and Spain confronted Italy with the danger that she would be left at Germany's mercy in the event of a German-Italian military victory over Britain and France. Consequently Mussolini refused to follow Hitler into the European War (q.v.), which broke out on September 3 as a result of the German invasion of Poland. Il Duce adopted a policy of "non-belligerency" which gave Italy, as the greatest European power not involved in hostilities, greater bargaining powers than at any time previous to the conflict.

There was some evidence that Mussolini used this strategic position to exact extensive concessions from Britain and France. The Rome correspondent of the *New York Times* reported on November 18:

... There are good reasons to believe Italy has already won important concessions with regard to the (Suez) canal and Jibuti (Djibouti) and has pledged concerning Tunisia —without fighting. But they are not legalized yet and the problems, therefore, remain open.

A week later France removed all war restrictions from the French side of the Italian border and the Italian High Command extended "winter leave" to an estimated 300,000 men called to the colors during the European summer crisis. These events coincided with a growing agitation in the Italian press against the spread of Soviet influence in the Balkans, resulting from the Soviet-German rapprochement. They followed Mussolini's sweeping reorganization of his government on October 31 in which six ministers closely identified with the Rome-Berlin axis policy were replaced.

Italo-German Relations. These developments led many observers to conclude that Italy was reversing her foreign policy and would eventually join the Anglo-French alliance. On December 7, however, the Fascist Grand Council issued a declaration reaffirming both the Italo-German military alliance and the policy of non-belligerency. It warned the Soviet Union to stay out of the Balkans and warned the Allies that Italy intended to safeguard its overseas traffic "in the most explicit manner, both for its prestige and for the indisputable necessities of life."

Further important light on Italy's policy was shed by Count Ciano before the Chamber of Fasci and Corporations on December 16. His speech bristled with hostility toward Britain and France, who were charged with responsibility for the European War. He defended German policy, including the pact with the Soviet Union, and "re-af-

firmed the Italo-German alliance. Nevertheless in explaining Italy's non-belligerency in the war, Count Ciano revealed substantial divergences in Italian and German foreign policies. He asserted that the Italian occupation of Albania was "absolutely independent" of the German seizure of Bohemia and Moravia, thus strengthening the belief that Mussolini took Albania to block a German advance into the Balkans rather than to support Hitler. He stated that the alliance with the Reich concluded in May aimed to consolidate their respective positions while both powers completed their military preparations.

"The duration of this period was set by us at three years; on Germany's part at four or five," he said. "The Reich agreed with us not to raise any question that would be likely to arouse new polemics before this lapse of time had passed."

Ciano revealed that as early as August 11, when he commenced a three-day conference with the German Chancellor and Foreign Minister on the issues raised by the Polish-German crisis, he submitted a suggestion from Mussolini for arbitration of Polish-German problems. Hitler and von Ribbentrop rejected the proposal on the ground that incidents had already "brought the dispute . . . away from the diplomatic field into the military sphere." Since the German determination to force a military solution of the Polish controversy violated the understanding regarding a three-year period of peace, the Italian Government took the position that it was under no obligation to support the Reich in the subsequent war. Count Ciano declared that Germany had gone farther than Italy expected in her rapprochement with the Soviet Union, and informed Italy of the accord less than 48 hours before its conclusion. However he reiterated Mussolini's statement of March 26 that Italy would not repeat her World War performance of shifting from the German to the Allied side.

Tirol Settlement. As part of the Italo-German understanding, Mussolini obtained from Hitler a settlement of the German minority problem in the South Tirol (Upper Adige), which was annexed by Italy from Austria after the World War, and in adjacent Italian provinces. The intensive Italianization campaign carried on for 20 years by the Fascist regime among the Germans living south of the Brenner Pass had failed. Moreover the advance of the German frontier to the Brenner in March of 1938 raised the probability of an eventual German demand for the return of the South Tirol, controlling the historic passage way across the Alps into northeastern Italy.

In mid-July the Italian police suddenly ordered the expulsion of all foreign tourists and residents from the South Tirol, and it was announced that an Italo-German accord had been reached for the transfer of the German-speaking inhabitants to the Reich. The attempt at summary expulsion of foreigners and the German-speaking minority encountered stubborn resistance, however, and on October 21 a German-Italian treaty was signed which regulated and moderated the transfer measures. All German citizens residing in the Italian frontier provinces (about 10,000) were forced to leave before December 31. The German-speaking inhabitants having Italian citizenship were given the choice of staying in Italy and accepting Italianization or moving to Germany. Those voting to leave were granted three years to dispose of their properties and migrate. See SWITZERLAND, *History*.

A plebiscite among the German-speaking inhabitants, completed by the end of 1939, showed 185,-

365 opting for Germany and 82,542 for Italy out of 267,907 in the South Tirol; 166,488 for Germany and 63,012 for Italy out of 229,500 in the Province of Bolzano; and 16,572 for Germany and 19,530 for Italy out of 36,102 in the Provinces of Trento, Udine, and Pelluno.

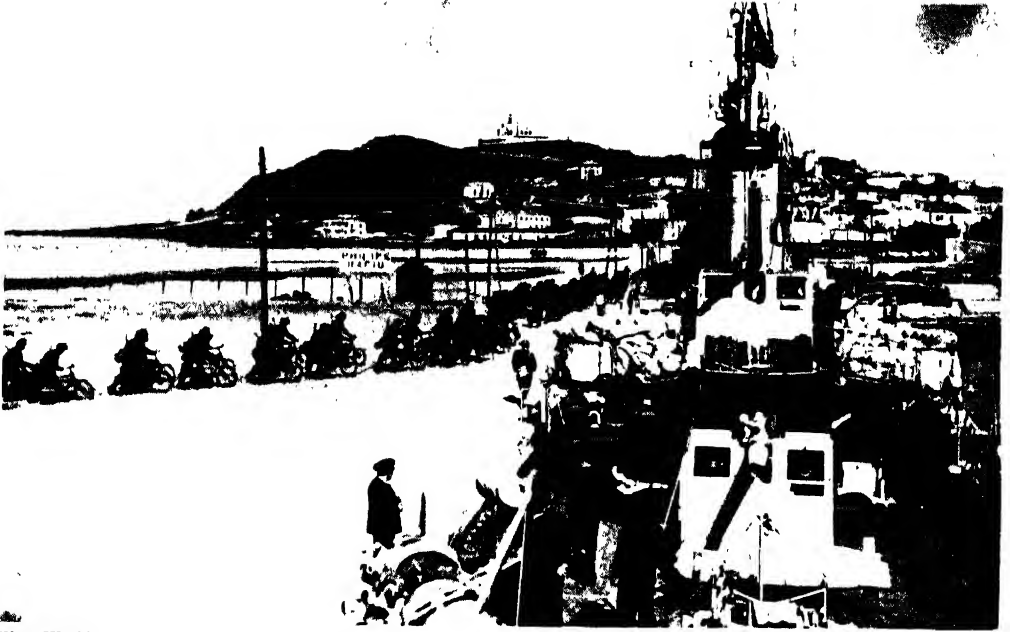
Balkan Policy. Although the Italian Government approved the German policy of neutralizing Soviet Russia, the concentration of German forces against Britain and France left the Danube basin and the Balkans open to Soviet penetration. This lessened Italian hopes of obtaining compensation in that region for Mussolini's collaboration with Hitler. Consequently the independent policy adopted toward the Reich after the outbreak of the European War was accompanied by increasing hostility toward Soviet intervention in the affairs of southeastern Europe.

In this stand Mussolini found himself on common ground with Turkey, Greece, Rumania, and Yugoslavia—all active or potential allies of Britain and France—as well as with the anti-Communist governments of Bulgaria and Hungary. The Italian attitude was reflected in the Fascist Grand Council's warning of December 7 and in the active sympathy and aid extended to the Finns by the Italian people and government after the Soviet invasion of that country. A new Soviet Ambassador to Rome was hastily recalled to Moscow on December 13 before he could present his credentials.

The Soviet threat led Mussolini to revise his former policy of promoting dissension among the countries of southeastern Europe by supporting Bulgarian and Hungarian revisionist claims. On September 20 Italy reached an agreement with Greece for mutual withdrawal of troops concentrated along the Albanian-Greek frontier. On September 23 Rome announced reduction of its garrisons in the Dodecanese Islands, taken from Turkey in 1923 and regarded by the Turks as a potential base for an Italian attack upon Anatolia. Mussolini also supported Yugoslav efforts for a peaceful settlement of the Hungarian-Rumanian and Bulgarian-Rumanian territorial disputes.

At the same time he promoted Italy's economic interests in the Balkans by concluding trade pacts with Hungary on September 15, Bulgaria on November 4, and a revised trade agreement with Yugoslavia on October 24. Italy thus entered into competition for the supplies on which Germany was vitally dependent for waging war against Britain and France. Moreover on November 3 important conversations were initiated with the Turkish Government for an adjustment of Italo-Turkish relations. Despite these moves, Count Ciano stated in his speech of December 16 that Italy saw no utility in attempting to establish a Balkan or Danubian bloc. Thus at the end of 1939, Italian foreign policy appeared to be following an independent and opportunist line in Europe; its future course would be determined solely on the basis of Mussolini's conception of Italian national interests.

Internal Affairs. Meanwhile the Fascist Government speeded up the process of mobilizing Italy militarily, economically, and spiritually for possible future entry into the European conflict. There were successive increases in armament appropriations, in the number of conscripts called for training, in the strength of fortifications along the German and French frontiers, and in the colonial defense forces. On October 27, 17th anniversary of the Fascist regime, a communiqué announced that Italy under fascism had spent 133,281,000,000 lire (about \$6,930,612,000) for military preparations,



Wide World

THE CONQUEST OF ALBANIA

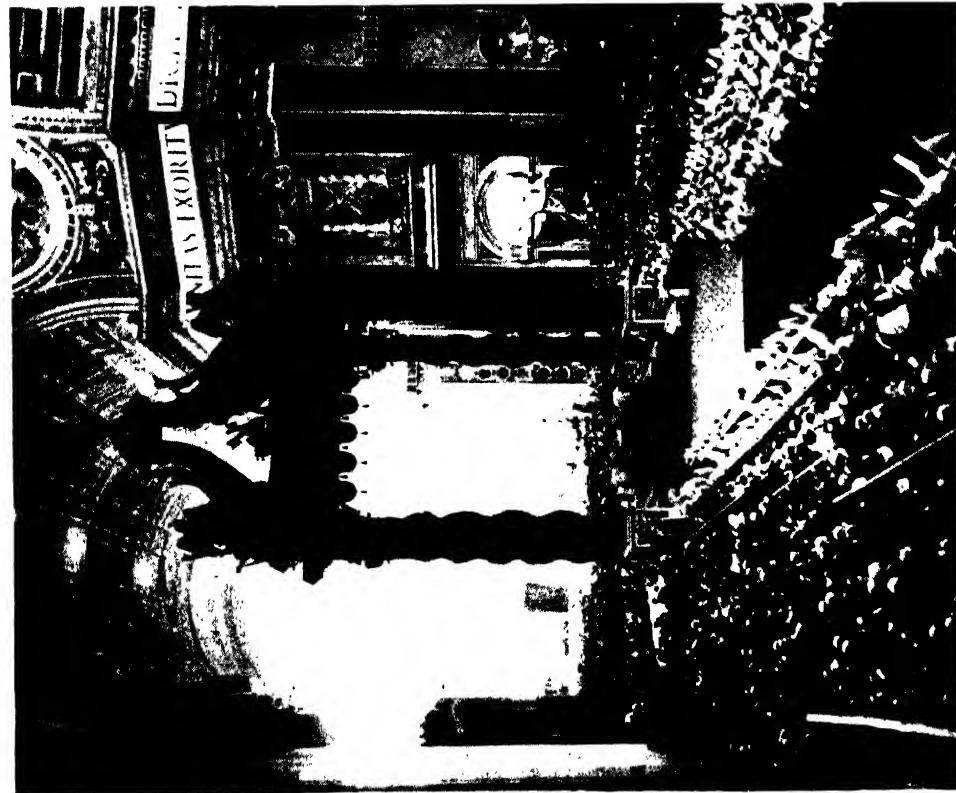
Italian troops landing at Durazzo on Apr 7, 1939, to annex Albania to Mussolini's expanding empire



Wide World

THE ITALO-GERMAN ALLIANCE

Signing the 10-year offensive-defensive pact in Berlin on May 22, 1939, are Count Galeazzo Ciano, Italian Foreign Minister (seated, left), and the German Foreign Minister, Joachim von Ribbentrop (seated, right). Seated in the center is Chancellor Adolf Hitler



Wide World

GENERAL VIEW INSIDE ST. PETER'S BASILICA, ROME, DURING CORONATION OF
PIUS XII ON MAR. 12, 1959



Wide World

POPE PIUS XII ON THE BALCONY OF ST. PETER'S

and that another 17,476,000,000 lire were to be appropriated in future budgets (see *National Defense* above). However Count Ciano in his speech of December 16 made the significant admission that there had been "huge wear and tear" on Italy's arms and equipment as a result of the Ethiopian and Spanish wars and the occupation of Albania.

The Autarchy Campaign. Aided somewhat by the annexation of Albania, Italy increased the tempo of its drive for economic self-sufficiency. Early in the year Count Volpi, head of the Fascist Confederation of Industrialists, estimated that 30,000,000,000 lire of capital investments would be required to carry out the national self-sufficiency program during the period 1938-41. On November 18 Mussolini declared that there could be no such thing as a peace economy for the European peoples since armed warfare was the "normal state of the people." "Therefore," he continued, "it is the fact, or rather the imminent fatality, of armed warfare that ought to dominate and that does dominate economy."

Yet with all the efforts of 1939 and preceding years to render the kingdom more independent of foreign sources of supply, Italy at the end of 1939 was able to furnish only 19 per cent of the mineral raw materials needed to supply her industries. Britain, France, and Turkey were in a position to paralyze Italian industry in a short time by blocking the three entrances to the Mediterranean. Even though Italy profited as a transshipment point for German and other trade after the outbreak of the war, the Rome Government was compelled before the year end to curtail consumption of such imports as gasoline, coal, coffee, cacao, sugar, iron, and steel. The shortage of foreign exchange, need for conserving vital supplies, and dislocation of normal trade necessitated this action.

Other Economic Measures. The year witnessed a further concentration of Italian industry into large privately-owned but government-controlled monopolies. The work of breaking up the large feudal estates of Sicily and redistributing some 1,235,000 acres of land into 20,000 farms at a cost of about \$125,000,000 was begun on October 21. This program called for the construction of public buildings, new roads and reservoirs, irrigation projects, and new farm buildings. Large-scale public works and reclamation projects were initiated or carried forward in other parts of Italy, and in Albania, Libya, and Italian East Africa. Reclamation of the Pontine marshes was completed on October 29 when Mussolini dedicated Pomezia, the last of a series of towns constructed in this former waste area. Work was speeded up, despite the war, on the construction of the Rome Universal Exhibition of 1942, to cost \$200,000,000 (see the last paragraph of the article on FAIRS AND EXPOSITIONS page 254 of this YEAR BOOK.).

Other economic developments of the year included a wage-rate increase of from 6 to 10 per cent on March 23 to conform to the rising cost of living. With the outbreak of the European War, the government on September 4 made exports of 58 products subject to license. These measures were followed by the progressive extension of rationing, of control over imports, exports and exchange transactions, of war taxes, anti-hoarding and anti-profiteering measures, and controls over prices and virtually all forms of economic activity. All transportation services were reduced, effective September 5. By the end of the year, however, industry had adjusted itself to wartime dislocations and was

working at or near capacity, largely on orders from Great Britain, France, and Belgium.

Politics. The year served to demonstrate the fact—questioned in 1938—that Mussolini was still the undisputed master of Italy's destinies. On his tour of northern Italy in May he was greeted with unbounded enthusiasm. A significant event was the publication on July 1 of the new Civil Code, replacing that of 1865 and substituting the Fascist concept of the relation of the individual to the state for the previous concept embodied in the Napoleonic Code.

On October 31 Mussolini announced one of the most drastic cabinet shake-ups in Fascist history. Six cabinet ministers, the chiefs of staff of the Army and Air Force, and Achille Starace, secretary of the Fascist party, were replaced. The composition of the new cabinet was as follows: Premier and Minister of War, Navy, Air, Interior and Land Reclamation, Benito Mussolini; Under-Secretary of War, Gen. Ubaldo Soddu; Under-Secretary of the Navy, Admiral Domenico Cavagnari; Under-Secretary for Air, Gen. Francesco Pricolo; Foreign Affairs, Count Galeazzo Ciano; Justice and President of the Chamber of Fasci and Corporations, Count Dino Grandi; Finance, Count Paolo Thaon de Revel; National Education, Giuseppe Bottai; Propaganda, Alessandro Pavolini; Corporations, Renato Ricci; Trade, Raffaello Riccardi; Italian East Africa, Gen. Attilio Teruzzi; Agriculture, Giuseppe Tassinari; Communications, Giovanni Host Venturi; Public Works, Adelchi Serena; Under-Secretary for Land Reform, Sergio Nannini; Under-Secretary of the Premiership, Lieut. Gen. Luigi Russo. Of these only Admiral Cavagnari, Counts Ciano, Grandi and Thaon de Revel, and Bottai were holdovers from the previous ministry.

In addition, Marshal Rodolfo Graziani, veteran of the Libyan and Ethiopian wars, replaced Gen. Alberto Pariani as head of the Army general staff. Ettore Muti succeeded Starace as secretary of the Fascist party. Marshal Pietro Badoglio, who led the main Italian army to victory in Ethiopia, remained as commander-in-chief of all armed forces.

This shake-up was followed by an extensive reorganization of the Fascist party on November 22, designed to increase centralization of control, strengthen discipline, and stimulate local enthusiasm. Several hundred party officials were replaced. At the same time it was announced that the Fascist press would be reformed to make it less stereotyped and more independent of party financing and control.

Relations with Vatican. The severe friction between the Italian state and the Vatican that broke out again in 1938 as a result of Mussolini's new racist, pro-German and other extremist policies (see 1938 YEAR BOOK, p. 360), continued during the first months of 1939. The election of Pius XI's Secretary of State as the new Pope on March 2 by the College of Cardinals was interpreted as a rebuff to these extremist tendencies in Italy. The Fascist Government, however, proceeded with the application of its anti-Jewish measures (see JEWS), described by an official spokesman on May 11 as inspired by "biological, political, and even religious necessity to defend the Italian race."

The new constitution of Italian Catholic Action, published August 1, marked the victory of the Fascist party in a three-year struggle to restrict Catholic Action to strictly religious affairs. Lay leaders of the organization were superseded by ecclesiastical leaders and it was forbidden to take part in

politics or secular public affairs. A week later the Italian press, in reporting the letter sent to French-Canadian Catholics by the Papal Secretary of State on behalf of Pius XII, omitted mention of passages referring to the inadequacy of Fascist tenets.

Mussolini's non-belligerency in the European War and his anti-Soviet policy gratified the Pope and relations between state and church thereafter showed a marked increase in cordiality. This trend culminated in the formal visit paid by King Victor Emmanuel and Queen Elena to the Pope on December 21, and the return visit which Pius XII made to the Italian sovereigns at the Quirinal Palace on December 28.

See ALBANIA, ARABIA, ARGENTINA, BULGARIA, ECUADOR, EGYPT, FRANCE, GERMANY, GREAT BRITAIN, GREECE, GUATEMALA, HUNGARY, ITALIAN EAST AFRICA, LIBYA, POLAND, RUMANIA, SPAIN, TURKEY, and YUGOSLAVIA under *History*; UNITED STATES under *Foreign Affairs*; ARCHAEOLOGY; CHEMISTRY, INDUSTRIAL; FASCISM; FAIRS AND EXPOSITIONS; JEWS; MILITARY PROGRESS; NAVAL PROGRESS; REPARATIONS AND WAR DEBTS; ROMAN CATHOLIC CHURCH.

IVORY COAST. See FRENCH WEST AFRICA.

JAMAICA, ja-mā'ka. A British West Indian crown colony. Area, 4540¼ square miles; population (Jan. 1, 1939 estimate), 1,173,645 compared with (1921 census) 858,818. CAYMAN ISLANDS (see below), TURKS AND CAICOS ISLANDS (see below), Morant Cays, and Pedro Cays are dependencies of Jamaica. Chief towns (with 1921 census figures): Kingston (the capital), including Port Royal (63,711), Spanish Town (8694), Montego Bay (6580), Port Antonio (6272), Savanna-la-Mar (3442), Port Maria (2481), Falmouth (2136). During 1938 there were 37,970 births (32.35 per 1000), 19,124 deaths (16.29 per 1000), and 5416 marriages (4.61 per 1000). The school system in 1938 included 664 grant-aided elementary schools with an aggregate of 158,418 pupils enrolled, 26 grant-aided secondary schools, and various other industrial and private schools.

Production and Trade. Bananas, sugar, coffee, rum, coconuts, pimento, grapefruit, logwood extract, ginger, cacao, oranges, tobacco, and logwood were the principal products. The sugar crop for 1938-39 amounted to 117,879 long tons all of which has been shipped, except that required for local consumption. In 1938 approximately 24,000,000 stems of bananas were produced. Live-stock in the colony (1937-38): 126,263 cattle, 8859 sheep, and 21,432 horses, mules, and asses. Trade (1938): Imports, £6,485,221 (chief items—foodstuffs, cotton piece goods, wearing apparel, automobiles, gasoline, fuel oil, and hardware); exports (including re-exports), £5,032,740 (chief items—bananas £2,916,956, sugar £859,500, rum £247,892, spices £207,070, coffee £132,907, coconuts £84,155). The vessels clearing the ports during 1938 aggregated 4,242,295 net tons. Some 62,690 tourists visited Jamaica in the same year. Jamaica had 6895 miles of roads in 1938.

Government. For the fiscal year ended Mar. 31, 1938, total revenue amounted to £2,476,136; total expenditure, £2,271,174. On March 31, 1938, the public debt amounted to £4,604,477 against which the sinking fund for its redemption was £605,492. Budget (1938-39): Revenue, £2,449,517; expenditure, £2,535,507. The government is headed by a governor who is assisted by a privy council (having the usual functions of an executive council) of 8 members, and a legislative council

of 30 members (the governor as president, 5 ex-officio, 10 nominated, and 14 elected). Unless previously dissolved the duration of the legislative council is for five years from the last preceding general election. Captain-General and Commander-in-Chief, Sir A. F. Richards (appointed June 5, 1938).

History. Early in 1939 the call for a general strike issued by the trade unions of Jamaica did not meet with a general response. As a result there was some disorder. The governor promised to introduce legislation providing for the arbitration of labor disputes but he said he would not stand aside and watch any section of the people using force to impose its will upon others. Later, the strike orders were cancelled. Consult *Labour Conditions in the West Indies* by Major Orde Brown (H.M. Stationery Office, London) for a review of the circumstances which have been responsible for the depressed condition of the labor market. Recommendations dealing with a particular colony are made in separate chapters.

The legislative council unanimously accepted the report of the Smith Committee on the new political constitution for Jamaica. The report proposed a legislative council (upper house) of 10 members (officials and others, nominated by the government) and a house of assembly (lower house) of 14 elected members.

The advent of the European war in September, 1939, directly affected the economic and industrial situation in Jamaica. Wartime regulations were put into force for the strict control of foreign currencies, proscription of exports except under permit, and a similar limitation upon the imports of certain goods—mainly foodstuffs. According to government estimates, at least 75 per cent of the banana-bearing trees were damaged by the prolonged rain and high wind which struck Jamaica early in November, 1939. The legislative council adopted proposals for lending £100,000 to storm-stricken agriculturists, and to fishermen, and for lending £100,000 to agriculturists for cultivation of food crops under the food-production scheme.

Cayman Islands. A dependency of Jamaica, consisting of the islands of Grand Cayman, Little Cayman, and Cayman Brac. Area, 104 square miles; population (1937), 6800. Georgetown (capital) had 1321 inhabitants in 1934. The chief products are coconuts, green turtle, thatch rope, and turtle shell. In 1937 imports totaled £27,321; exports, £10,478; revenue, £17,410; expenditure, £16,649. The government is administered by a commissioner under the direction of the Governor of Jamaica.

Turks and Caicos (kī'kōs) Islands. A dependency of Jamaica. Area, 166 square miles; population (1937), 5300. The principal products are salt (1,400,840 bu. exported in 1937), conchs, turtle shell, sponges, and sisal. In 1937 imports were valued at £25,654; exports, £30,061 (including re-exports); revenue, £21,148; expenditure, £10,955. There is a cable station at Grand Turk. The government is administered by a commissioner (with headquarters on Grand Turk) aided by a legislative board of seven members (appointed by the Crown), subject to the supervision of the Governor of Jamaica.

JAPAN. A Far Eastern empire, comprising (1) Japan proper, or the five main islands of Honshu, Kyushu, Shikoku, Hokkaido, and Ryukyu, with some 600 smaller islands; (2) Formosa (Taiwan); (3) Korea (Chosen); (4) Karafuto (southern Sakhalin); and (5) Pescadores (Boko-

to) Islands. In addition Japan controlled the leased territory of Kwantung and the South Manchuria Railway Zone in Manchuria and mandated territories (Marianne, Caroline, and Marshall Islands) in the North Pacific. During 1931-33 it established a protectorate over three Chinese provinces (Liaoning, Kirin, and Heilungkiang) in Manchuria and Jehol Province in Inner Mongolia, forming them into the new state of Manchoukuo. Capital of Japan, Tokyo; Emperor in 1939, Hirohito, who ascended the throne Dec. 25, 1926. See separate articles on FORMOSA, KOREA, KARAFUTO, JAPANESE PACIFIC ISLANDS, KWANTUNG, and MANCHOUKUO.

Area and Population. The area and population of the empire at the censuses of 1930 and 1935 are shown in the accompanying table.

JAPANESE EMPIRE: AREA AND POPULATION

Island	Area sq miles	Population, 1930 census	Population, 1935 census
Japan proper	147,593	64,450,005	69,254,148
Korea	85,228	21,058,305	22,899,038
Formosa*	13,889	4,592,537	5,212,426
Karafuto	13,934	295,196	331,943
Japanese Empire	260,644	90,396,043	97,697,555
Kwantung	1,438	1,328,011	1,656,726
Mandated Pacific Is.	830	69,626	102,537

* Including Pescadores (Bokoto) Islands; area, 49 square miles.

† Including South Manchuria Railway Zone.

The population of Japan proper was estimated at 72,222,700 on Oct. 1, 1938. Births in Japan proper in 1937 numbered 2,180,734 (30.6 per 1000); deaths, 1,207,899 (17.0 per 1000); marriages, 674,500 (9.5 per 1000). With more than a million men in China, the Japanese birth rate dropped to 9.26 in 1938; the death rate in Japan proper was 17.44. On Oct. 1, 1937, there were 1,376,916 Japanese residing abroad (405,701 men and 297,762 women in the Americas). The number of foreigners in Japan on Jan. 1, 1938, was 29,406 (2069 U.S. citizens). The estimated populations of the chief cities on Oct. 1, 1938, were: Tokyo, 6,457,600; Osaka, 3,221,200; Nagoya, 1,224,100; Kyoto, 1,159,800; Kobe, 989,100; and Yokohama, 777,500. Populations of other important cities on Oct. 1, 1937, were: Hiroshima, 326,600; Fukuoka, 308,200; Kure, 248,400; Yawata, 229,600; Sendai, 229,400; Nagasaki, 214,600; Hakodate, 211,700; Shizuoka, 211,600; Sapporo, 205,900; Yokosuka, 203,800.

National Defense. Military training is compulsory. Estimates of Japan's land, air, and sea strength vary. According to the Adjutant General's Office, Washington, D. C., the army consisted of 1,500,000 active soldiers and 4,771,000 trained reserves on Nov. 1, 1939. The air force comprised 37,000 men and 3000 craft. Naval units on July 1, 1939, included 11 battleships; 11 aircraft carriers; 20 cruisers; 111 destroyers; and 59 submarines. See MILITARY PROGRESS; NAVAL PROGRESS.

Education and Religion. Approximately 8.3 per cent of persons over 10 years of age are illiterate, but illiteracy is confined largely to people over 50 years of age. The school enrollment in 1936 was: Elementary, 11,425,628; secondary, 770,681; university, 71,607. There is no state religion and religious freedom prevails. Shintoism, with 13 different sects, and Buddhism, with 12 sects, are the principal religions. The Roman Catholic, Greek Catholic, and Protestant churches have a relatively small following.

Production. Manufacturing normally accounts for about 32.7 per cent of the national income, commerce for 25.4 per cent, and agriculture for about 17.7 per cent. Agriculture, however, supports nearly half the population of Japan proper. The rice

yield in 1939 was 331,264,000 bu. The output of other principal products (in metric tons and in 1939 unless otherwise specified) was: Wheat, 1,621,000; barley, 1,620,700; oats, 152,700 (1937); maize, 86,200 (1937); potatoes, 2,066,900 (1937); tobacco, 65,600 (1938); tea, 54,700 (1938); soybeans, 366,700 (1937); beet sugar, 45,700 (1938); cane sugar, 134,100 (1938); silk, 41,875 (1937); rayon, 96,500 (1938); beer, 74,628,307 gal. (year ended June 30, 1938). The fisheries catch of Japanese fishermen in Japanese and colonial waters totaled 3,622,000 metric tons in 1936. The total value of industrial production in 1937 was 16,173,000,000 yen, of which textiles accounted for 24.9 per cent; metals and metal products, 20.9 per cent; machinery and tools, 15.3 per cent; ceramics, 1.8 per cent; chemicals, 18.9 per cent; lumber and wood, 2.4 per cent; printing and book-binding, 1.6 per cent; foodstuffs, etc., 10.0 per cent.

Mineral and metallurgical production of Japan proper (in metric tons and in 1938 unless otherwise specified) was: Crude petroleum, 356,000 (including Formosa); copper ore, 100,000; tin, 2200; aluminum (smelter), 20,000; superphosphates of lime, 1,400,000; coal (1937), 46,000; lead (1937), 10,200; zinc (1937), 20,000; gold, 760,000 fine oz.; silver, 10,100,000 fine oz.

Foreign Trade. Preliminary estimates of Japan's trade in 1939 placed imports at 2,917,000,000 yen and exports at 3,576,000,000 yen. (These figures include commerce of Japan with other parts of the Japanese empire; trade with foreign currency countries showed an import excess of 405,000,000 yen.) In 1938 imports were valued at 2,663,337,000 yen; exports at 2,689,677,000 yen. The principal imports (in the order of their value) were cotton, beans, wool, coal, oil cake, crude rubber, and wood pulp. Leading exports were cotton tissues, raw silk, machinery, rayon cloth, canned goods, wheat flour, paper, wrought iron, silk tissues. For distribution of trade, see 1938 YEAR BOOK, page 364. Consult also article on IMPORTS AND EXPORTS in current volume.

Finance. The official budget statement for the fiscal year ended Mar. 31, 1939, showed total revenue of 3,595,000,000 yen (ordinary, 2,332,000,000; extraordinary, 1,263,000,000); and total expenditures of 3,289,000,000 yen (ordinary, 1,600,000,000; extraordinary, 1,689,000,000). Extraordinary receipts included proceeds of sales of deficit bonds; expenditures excluded the cost of the war in China, estimated at 5,000,000,000 yen, accounts for which were kept in a special military expenditures budget. The basic budget for the year ending Mar. 31, 1940, estimated receipts and expenditures at 3,694,666,976 yen, which were increased by supplementary budgets to 4,804,542,627 yen, exclusive of special appropriations of 4,605,000,000 yen to defray the cost of the war in China. The 1940-41 general accounts budget anticipated revenue and expenditures of 5,900,000,000 yen; the cost of the war in China was estimated at 4,469,000,000 yen.

The public debt on Nov. 30, 1939, was 20,859,000,000 yen (15,522,000,000 on Nov. 30, 1938). Government bonds floated during 1939 aggregated 5,280,000,000 yen. The Japanese yen, which had been linked to the pound sterling, was cut loose from the British currency on Oct. 24, 1939, and pegged to the American dollar at the rate of \$0.23 1/16 to one yen. The average exchange value of the yen was \$0.2845 in 1938 and \$0.2596 in 1939.

Transportation. On Mar. 31, 1938, there were 11,144 miles of government and 4240 miles of private railway line. For the year ended Mar. 31,

1938, state railways carried 1,156,266,000 passengers and 98,170,440 tons of freight, the gross receipts totaling 670,164,000 yen. There were 594,749 miles of highways of all kinds in 1939 (see *ROADS AND STREETS*). Regular air services connect the principal cities of Japan proper with Formosa, Korea, Manchuria, China proper, and the Japanese mandated islands in the Pacific. In August, 1939, there were 21 air services covering 9598 route miles and flying a total of 134,102 miles per week. The merchant marine in 1938 consisted of 2187 vessels with a gross tonnage of 5,006,712. During 1938, the net tonnage of ships entering Japanese ports (with cargo and ballast) was 59,220,000.

Government. Under the Constitution of Feb. 11, 1889, executive power is vested in the emperor, who acts with the advice and aid of a ministry appointed by and responsible to him, but every law normally requires the approval of the Imperial Diet of two chambers. The Upper Chamber (House of Peers) consisted in 1939 of 408 members, of whom 192 were chosen for life on the basis of rank, wealth, and other qualifications and the remainder were elected from and by special groups for seven years. The House of Representatives consisted of 466 members elected for four years. The elections of Apr. 30, 1937, divided the House into two major parties (Minseito, with 175 seats, and Seiyukai, with 172), three minor parties and various independents. The military-fascist groups gradually extended their control over the government after the invasion of Manchuria in 1931 and won a complete victory with the installation of the cabinet headed by Baron Kiichiro Hiranuma on Jan. 4, 1939 (see 1938 *YEAR BOOK*, p. 365). For political changes in 1939, see *History*.

HISTORY

Domestic Affairs. Internal developments in Japan during 1939, like the foreign policies of the Tokyo Government, were all influenced or determined by the imperialist and expansionist program of the dominant military-fascist groups.

Their primary objective was the political and economic domination of China and the destruction of all foreign rights and interests obstructing Japanese exploitation of China's people and resources. They planned, in addition, to bring the other independent states and European colonies in Eastern Asia under Japanese control and to correlate their resources and markets with the Japanese national economy.

In pursuit of this objective, the Japanese nation sank steadily deeper into the military, economic and diplomatic morass of the Chino-Japanese war (see *CHINA* under *History* for a full account). Unable to crush the Chinese armies, to win Gen. Chiang Kai-shek's consent to a compromise settlement, or to overcome the resistance offered by the Western Powers and the Soviet Union, the Japanese leaders by the end of 1939 were talking of the necessity for a 10-year struggle to achieve their ambitions in China. But this prospect found little favor among Japanese civilians and politicians. There was growing complaint at the hardships imposed upon the nation, apprehension at the increasing hostility aroused in the United States and elsewhere by Japanese policy, and more outspoken criticism of the military leaders responsible for the nation's dilemma. Yet there was little or no evidence at the year end that this discontent would suffice to change Japan's course, or terminate military-fascist control of the government.

Economic Trends. The financial-economic cri-

sis that had been developing since the beginning of the war with China became more acute during 1939. Under the wartime economy set up to prosecute the struggle, Japan's export trade declined. Dwindling foreign exchange and gold reserves forced the government to curtail imports of raw cotton and other commodities vital to the maintenance of the export industries. Capital resources were increasingly strained to meet huge war loans and the growing demand for non-military financing. Heavy casualties in China and the maintenance of more than a million men under arms, spread over an extensive front on the mainland, caused severe shortages of both labor and shipping for non-military economic activities.

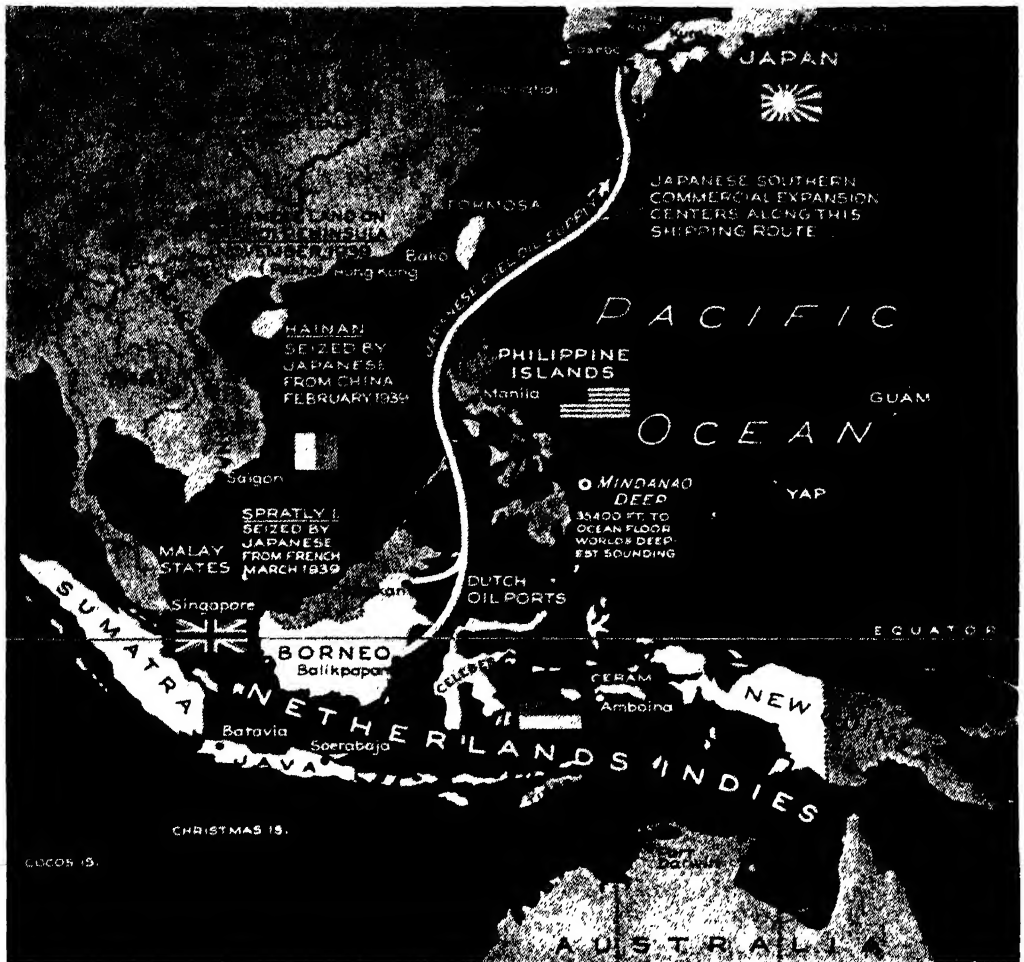
The economic difficulties attributable directly to the war were aggravated by a drought of unprecedented severity. This contributed to the shortage of electric power that hampered Japanese industries throughout 1939, and to the rice shortage that led to a near crisis in December. On May 16 the president of the Cotton Spinners Association declared that the cotton industry was in a desperate condition. There was a growing scarcity of other necessities, such as coal for industries and charcoal for heating homes.

Notwithstanding government price-control measures, prices of staple commodities continued to rise. The cost of living for laborers rose 14.3 in the year ended in December, 1939; of salaried classes, 12.8 per cent. The note issue of the Bank of Japan increased from 1,580,000,000 yen in July, 1937, to 3,818,000,000 yen on Dec. 31, 1939, exceeding the legal limit by 1,118,000,000 yen. The rapid development of inflationary trends forecast application of the remaining controls over social and economic life vested in the army-dominated Cabinet Planning Board under the National Mobilization Law of 1938 (see 1938 *YEAR BOOK*, p. 365).

Before passing this law, the Diet had exacted a pledge from the Konoye Government that it would not be applied during the Chino-Japanese war, but reserved for use in the event of a conflict with some other foreign power. However some of the controls provided for in the law were applied during 1938 and more drastic ones followed in 1939. Toward the end of April the Central Price Commission initiated a far-reaching price control program for fixing commodity prices at international levels and extending more rigid control over costs of raw materials, freight, labor wages, and other export costs.

Shortly afterward the Cabinet Planning Board announced a three-year program for the expansion of production of essential basic commodities in Japan, Manchuria and North China. The objective was to make the yen-bloc territories independent of foreign sources of supply for iron and steel materials, nonferrous metals, gasoline and heavy oils, chemicals, etc., by the spring of 1942. However shortages of skilled labor and of capital in Japan prevented the expected progress along these lines. Another set-back resulted from the cutting off by the European War of machinery and other equipment ordered in Germany and Japan on a barter basis for the industrialization of Manchuria and North China. The war also made it harder than ever for Japanese industry to obtain needed raw materials.

In consequence the Cabinet Planning Board on September 19 enforced additional articles of the National Mobilization Law to curb commodity prices. On September 25 exports of various food products to yen-bloc areas were restricted. The



Life Magazine

JAPAN'S SOUTHWARD EXPANSION

After their attack upon Central China in 1937 the Japanese moved steadily southward along the sea route to Malayan markets and to the Borneo oil fields where their navy obtains its fuel. Canton was seized on Oct. 21, 1938, Hainan Island in February, 1939, the Spratly Islands (near Singapore) in March and the Pakhoi Peninsula in South China in November December, 1939



Wide World

JAPANESE-AMERICAN NEGOTIATIONS

United States Ambassador Joseph C. Grew and Foreign Minister Kichisaburo Nomura conferring late in 1939 during their unsuccessful efforts to arrange a basis for improved relations



Brown Brothers

GEN. NOBUYUKI ABE
Premier of Japan, appointed Aug. 29, 1939



Wide World

BARON KIICHIRO HIRANUMA
Premier of Japan, Jan. 5-Aug. 28, 1939



Brown Brothers

JAPAN'S ANTI-BRITISH DRIVE IN CHINA
Japanese sentries and the barricade erected in connection with the blockade of the British and French Concessions in Tientsin, China, instituted June 14, 1939

coal ration was cut again on October 1. On October 20 six additional ordinances were issued under the Mobilization Law covering price control, salary adjustment, land and house rental control, electric power adjustment and inspection of munition factories. Anti-profiteering and compulsory cultivation regulations were strengthened. In December the Cabinet decided upon sweeping changes in national and local taxation, increasing the tax burden on all classes.

Armament Program. While prosecuting the war in China at such tremendous cost, the Japanese Government also undertook to speed the mechanization of the army and to further expand the navy. Mechanization of the army was deemed essential after mechanized Soviet forces in August and September inflicted a severe defeat upon the cream of the Japanese military forces in the undeclared hostilities along the Mongolian-Manchoukuo frontier (see MANCHOUKUO under *History*). As for the naval program, Admiral Yonai, the Navy Minister, stated on March 6 that a six-year building program had been decided upon which would give Japan a sea force second to none and having "sufficient power to deal with any international friction arising over the construction of the new order in East Asia." See NAVAL PROGRESS.

Political Developments. The growing financial-economic crisis and the increasing foreign dangers resulting from the effort to establish Japanese domination in Eastern Asia were reflected in governmental developments of the year. The political crisis that led to resignation of the Konoye Ministry on Jan. 4, 1939, hinged mainly on the army's demand for greater control of the Japanese economic system. The new cabinet formed January 5 was headed by Baron Hiranuma, Japan's outstanding military-fascist leader. Most of the other members were holdovers, with the notable exception of Sotaro Ishiwatari, who replaced Finance Minister Ikeda, opponent of the army's economic control program.

The Hiranuma Government supported the attacks by Japanese army leaders in China upon foreign interests, but it split over their demand for transformation of the anti-Comintern pact into a hard-and-fast military alliance uniting Japan with Germany and Italy against the democratic powers and the Soviet Union. After weeks of tense discussion, the cabinet on May 20 advised the Emperor to reject the German alliance offer. The resentful army leaders now determined to push the Tokyo Government into the alliance by creating situations that would make it necessary. They provoked incidents along the Mongolian-Manchoukuo frontier that led to the disastrous test collision with well-armed Soviet troops in August. A first-class diplomatic crisis with Great Britain was precipitated by the army's action in blockading the Tientsin concession (see CHINA under *History*).

The army's adventurous game, which several times appeared certain to succeed in its purpose, was balked by the opposition of the Emperor and by three developments that played into the hands of those Japanese circles opposing an alliance with Germany and Italy. The first of these was the abrogation by the Washington Government on July 26 of the Japanese-American treaty of commerce and navigation of 1911. The second was the conclusion of the German-Soviet non-aggression pact on August 24. The third was the outbreak of the European War on September 3.

The German-Soviet pact in particular discredited the alliance policy of the army extremists, and

caused them to switch to the opposite program of isolation from European affairs and concentration upon prosecution of the Chinese war and the East Asia policy. The shift from extremism to a more moderate foreign course was marked by the resignation of the Hiranuma Cabinet on August 28; establishment of a new government headed by Gen. Nobuyuki Abe on August 29; the conclusion of Soviet-Japanese hostilities on the Mongolian border through the truce of September 15; and the initiation of negotiations for a compromise arrangement with Britain, France, and the United States covering their interests in China. At the same time another unsuccessful offensive was launched against Changsha in China to retrieve Japanese military prestige. On September 4 the Cabinet announced that it intended to stay out of the European War and concentrate on "settlement of the China affair." This stand was later made conditional upon non-interference and non-obstruction of Japan's China policy by the belligerents.

The Civilian Revolt. The hardships suffered in Japan as a result of extremist military-fascist policies, the growing foreign dangers provoked by the expansionist program, and the domination of the Tokyo Government by the army leaders precipitated a civilian political revolt toward the end of the year. In October the government announced the merging of the commercial bureau of the Foreign Office with the newly established Trade Ministry. Taking exception to this as another example of army interference with the operation of Japan's foreign affairs, 113 secretaries and section chiefs of the Foreign Office presented their resignations on October 11. Some 50 ambassadors, ministers and consuls-general followed suit. At great injury to its prestige, the government on October 13 capitulated to the strikers' demands for revocation of the order.

To strengthen the government's admittedly weak position in advance of the new session of the Diet, Premier Abe on November 29 added two additional Ministers—Railways and Welfare—to his cabinet. He also indicated that he had sought and obtained a promise of support for the government in the forthcoming session from the Minseito party. The reviving confidence of the political parties, who had long been ignored by the government and the military leaders, was shown when the Diet convened on December 26. The same day 240 of the 466 members in the House of Representatives signed a petition expressing non-confidence in the government and calling upon it to resign.

This action was interpreted as a spontaneous expression of national discontent at the regimentation and scarcities imposed by the war. It was not considered a symptom of dissatisfaction with the Japanese objectives in China, which still appeared to enjoy wide support among the people. The Abe Cabinet on December 28 decided not to resign but to continue its efforts to settle the "China Incident," as the war was called, and to adjust relations with third powers on Japan's terms.

Foreign Relations. Japan's foreign relations during the year dealt mainly with the Chinese problem and are discussed in some detail in the article on CHINA under *History*. The following brief survey is complementary to that description.

The neutrality of the Soviet Union and the United States in the European War, and the strong line taken by the Washington Government in resisting Japanese attacks upon American Far Eastern interests, prevented Japan from exploiting to the full the greater freedom she obtained through

the embroilment of Britain and France in Europe. On September 23 Premier Abe named Admiral Kichisaburo Nomura as Foreign Minister in an effort to improve Japanese-American relations. The government also indicated its readiness to make some concessions to British and French interests in the "occupied" areas of China.

After concentrating the American fleet in the Pacific at the outbreak of the European War, the Roosevelt Administration notified the Japanese Government through Ambassador Grew's frank speech of October 19 in Tokyo that it was not prepared to sacrifice American interests to the extent demanded by the Japanese program for a "new order" in Eastern Asia. Civilian and moderate army and navy officers hesitated to risk the danger of an American embargo and possible war created by this clash of national interests. But the extremist military leaders again asserted their control of Japanese policy. From the end of October the efforts of the Abe Government to conciliate the United States were largely frustrated by army demands that the negotiations be based upon prior American acceptance of the "new order" in East Asia. At the same time further pressure was brought upon Britain and France to surrender what was left of their positions in China. The year ended with Britain and France slowly retreating and with Japanese-American relations in a dangerous state of tension.

Expansion Toward South Seas. Not content with their progress on the Chinese mainland, the Japanese during 1939 continued their gradual political advance and economic penetration into southeastern Asia. Hainan Island was seized February 9 and the Spratly Islands in the South China Sea between Borneo and Indo-China on March 31, although the Spratly group had been formally annexed by France in 1933. In November leading organs of Japanese opinion expressed the opinion that the European War presented Japan with an opportunity to establish a "preferential position" in the European colonies in the Pacific, particularly in exploiting the oil of the Netherlands Indies (q.v.). The United States was said to be the major obstacle to Japanese expansion toward the southwest.

Relations with Soviet Union. Toward the U.S.S.R. the Japanese military leaders displayed a far more conciliatory attitude following the sharp reverse inflicted by Russian arms in August. The Soviet-Japanese truce of September 13 constituted a retreat from the position previously adopted by the army extremists. Some extremist groups who had previously advocated war upon the Russians began in November to advocate a Soviet-German non-aggression pact. Japan avoided taking a stand on the Soviet invasion of Finland, although Moscow's involvement on that front weakened its hand in dealing with Japan.

The negotiations that began in mid-November for a settlement of the most pressing Soviet-Japanese problems were carried to a successful conclusion on December 31. The perennial dispute over the Kamchatka fisheries question was tided over by Moscow's renewal of the existing fisheries *modus vivendi* for one year. The Soviet Government also agreed to start immediate negotiations for a long-term fisheries treaty. At the same time Japan agreed to the immediate payment by Manchoukuo (q.v.) of 5,900,000 yen still due the U.S.S.R. for the Chinese Eastern Railway. Another agreement was reached for the demarcation of all frontiers where Japanese and Russian inter-

ests were in conflict, and for establishment of a mixed commission to deal with border disputes.

See ARABIA, BRAZIL, CHINA, FRANCE, GERMANY, GREAT BRITAIN, MANCHOUKUO, MONGOLIA, NETHERLANDS, NETHERLANDS INDIES, PHILIPPINES, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*; UNITED STATES under *Foreign Affairs*; CHEMISTRY, INDUSTRIAL; EARTHQUAKES; FASCISM; MILITARY PROGRESS; NAVAL PROGRESS.

JAPANESE BEETLE. See ENTOMOLOGY, ECONOMIC.

JAPANESE PACIFIC ISLANDS (NANYO). Under the Treaty of Versailles, Japan was given a mandate to rule the former German South Sea Islands north of the Equator. They include (1) the Marianas (or Ladrone) group of 14 islands, the main ones being Saipan, Tinian, Rota; (2) Caroline group of 549 islands, the main ones being Yap, Palau, Angaur, Spring, Summer, Wednesday, Ponape, Kusaie; (3) Marshall group of 60 islands, the most important being Jaluit. Total area, 830 square miles; total population (April 1, 1937 estimate), 109,847.

Production. Cane sugar (1935-36, 49,100 metric tons), maize (1936, 200 metric tons), phosphates (1936, 70,000 metric tons), tapioca, bananas, coffee, yams, taro, alcohol, and copra (1936 exports, 12,200 metric tons) are the main products. In 1937 the estimated value of merchandise imports (in old U.S. gold dollars) was \$3,200,000 (1936, \$2,500,000); exports, \$4,300,000 (1936, \$3,500,000).

Government. The budget for the year ending Mar. 31, 1939, was balanced at 9,674,669 yen (yen averaged \$0.2845 in 1938). A governor, with headquarters in Koror in the Caroline group, administers the islands under the Japanese Minister of Overseas Affairs.

JARVIS ISLAND. See BAKER, HOWLAND, AND JARVIS ISLANDS.

JAVA. See NETHERLANDS INDIES.

JEBEL DRUZE. See DJEBEL DRUSE.

JEHOL. See CHINA under *Area and Population*.

JERSEY CITY. See NEW JERSEY.

JEWISH AUTONOMOUS REGION. A Jewish colony (formerly called Birobidjan) in the far eastern territory of Khabarovsk of the Russian Soviet Federated Socialist Republic of the Soviet Union. Area, 14,200 square miles; population (1935), 50,000. Capital, Birobidjan.

JEWISH WELFARE BOARD. The Board has a twofold purpose. It is the parent body for Y.M.H.A.'s, Y.W.H.A.'s and Jewish Community Centers in the United States and Canada. It also provides for the religious and welfare needs of men in the service of the U.S. Army, Navy, Marine Corps, disabled veterans, young men in CCC camps, and C.M.T.C.

The Board is composed of 324 constituent societies in the United States and Canada, which have 380,000 members, and own 242 buildings.

Seven regional organizations are affiliated in the work of the Board: Associated Young Men's and Young Women's Hebrew Associations of New England; New York State Federation of Young Men's Hebrew Associations, Young Women's Hebrew Associations and Jewish Community Centers; New York Metropolitan Section, Jewish Welfare Board, Inc.; New Jersey Federation of Young Men's Hebrew Associations and Young Women's Hebrew Associations; Pennsylvania-Middle Atlantic Federation of Young Men's and Young Women's Hebrew As-

sociations and Kindred Associations; Midwest Section of the Jewish Welfare Board; and Pacific Coast Federation of Jewish Community Centers.

The Board works in the fields of Jewish Center problems relating to programmes of activities and administration, vocational guidance, educational and recreational activities, cultural and social adjustment of immigrants, community surveys and institutional studies, club leadership training, summer and day camps, health and physical education, extension education, forums and lectures, and maintains a field service in contact with its affiliate organizations.

The Army and Navy Committee, Dr. Cyrus Adler, Chairman, serves approximately 5000 men of the Jewish faith in the Army, Navy, and Marine Corps, 1200 disabled veterans in government hospitals and soldiers' homes, and about 1600 young men in the Civilian Conservation Corps. The Board is in contact with 285 army posts, naval stations, and veterans' institutions in the United States and outlying territories. In 1938 the Committee expended \$40,275 in this work. The Board expended a total of \$150,907 in 1938. The Board was organized Apr. 9, 1917, to provide religious and welfare services for the men in the military forces in the World War.

The officers of the Board were: Irving Lehman, President; Jacob M. Loeb, M. C. Sloss, and Mrs. Felix M. Warburg, Vice Presidents; Frederick L. Ehrman, Treasurer; Joseph Rosenzweig, Secretary; and Louis Kraft, Executive Director. The headquarters are at 220 Fifth Avenue, New York City.

JEWS. Although the greatest disaster, at least for magnitude, which the Jewish people have suffered since ancient times befell the Jews of Poland in 1939, the disaster itself is but an incident and a step in a standing policy pursued by the German government under Hitler, and a link in a world-wide anti-Semitic movement sponsored by Germany. Neither the fate of the Polish Jews nor the blows or threats directed against Jewry in other lands can be properly accounted for unless this policy is kept in mind. Once again, as in the past six years, responsible German authorities have voiced their intention of waging war upon all Jews. In his Wilhelms-haven speech of Mar. 30, 1939, Chancellor Hitler declared that the Jewish people must be combatted "on a world-wide scale." Dr. Alfred Rosenberg, political philosopher of National Socialism, announced (May 24) that the Reich's war on Jewry will be pushed "until there is not a single Jew left on European soil." When the German army marched into Poland, Hitler's appeal to the German nation (September 3) placed the responsibility for world war upon "the Jewish plutocratic and democratic upper crust which in all peoples desires to see only obedient slaves"; and this view has been sedulously echoed by pro-German or fascist spokesmen in England, France, Italy, and many neutral lands. The Anti-Comintern Bureau of Germany, hitherto a fountain-head of anti-communist propaganda, announced (September 17) that hereafter it will devote all its energies to fighting not the communists but the Jews, whom it asserted to be the world's Public Enemy No. 1. In November, Julius Streicher of *Stürmer* fame gave a series of speeches throughout Franconia under the rubric: "Germany's victory will spell the death of the Jewish people."

Aside from its economic returns in the way of robbery and spoils, the purpose of this policy is apparent. It seeks to place the guilt for a world at war upon the shoulders of an immemorial scapegoat; and it is calculated to demoralize enemy nations, paralyze prospective victims, weaken neutrals, and attract friends through awakening whatever latent anti-Semitism the local conditions will provide. And more than any other factor it has shaped Jewish destiny during the past year.

Poland. When the 3,200,000 Jews of Poland entered upon what may prove to be their final martyrdom they were already a stricken people. As a result of the economic misery common to the majority of Poland's inhabitants and in further consequence of governmental, educational, and business restrictions and discriminations, coupled with widespread boycott, anti-Semitic agitation, and violence, three-fourths of the Jews did not earn enough to make both ends meet, and managed to survive only through the aid of local and foreign Jewish charities. Of this impoverished mass, almost one million were totally destitute.

Up to the very outbreak of the war, anti-Semitism was rampant. It sprang chiefly from Polish nationalist forces bent on thwarting democratic movements among the peasants and workers, and from German propaganda aimed at keeping the country divided and impotent. A Nationalist Party campaign to "rid the towns and cities of Jewish control" reached its climax in the spring in connection with the drive for an Air Defense Loan. Typically, the nationalist and pro-government press accused the Jews of failing to support the loan, although the final figures disclosed that they had subscribed 35 per cent of the amount raised among the urban population. Typically too, the Ministry of Justice admitted no Jewish lawyers to the bar in 1939. The Warsaw Municipal Council decided (May 16) to dismiss "as far as possible" Jewish municipal employees and granted special subsidies to promote "Christian" trade and industry. Business and professional associations continued their customary drive to expel Jewish members and induce the authorities to deprive them of licenses to trade or practice. In the universities, "ghetto benches" continued to be the rule; and the number of Jewish students allowed to enter schools of higher learning was limited to 10 per cent of the total enrollment, except in such schools where it was zero per cent. Violence and terror continued in both universities and the country at large. And the government continued its efforts, in collaboration with Rumania, through appeals to the Intergovernmental Refugee Committee and *démarches* in London and Paris, to solve the whole problem by eliminating the Jews through mass emigration. Meanwhile, all along the Polish-German border—the town of Zbaszyn with its 3500 victims was merely notorious—thousands of Polish-Jewish refugees from Germany lived in a no-man's land, a prey to starvation and disease. The entire policy of Poland toward its Jews can be summarized and thrown into relief by the promise of the present government-in-exile, now seated in France; the promise is at once a confession and a source of hope. In a radio address (November 27) the new premier, Wladislaw Sikorski, pledged that in a re-born Poland "Jews will enjoy equal rights granted to all citizens" and that his own energy "will be devoted to see-

ing to it that the Jews are treated differently from hitherto."

The conquest of Poland and its subsequent partition inflicted terrible suffering upon the entire population. Yet in every respect, as the special target of German wrath and policy, the Jews suffered most. The military attack on the large cities by air and land was concentrated upon their Jewish sections. In Warsaw alone, out of 330,000 Jews (nearly one-third of the city's population) some 200,000 were rendered homeless, and casualties numbered 20,000. Here as elsewhere, the Jews defended their fatherland stubbornly—"they fought," said the new foreign minister Zaleski, "as heroically as the Poles"—to no avail; 60,000 were, it is estimated, killed in the war. Half the Jewish centers throughout the country were wrecked or, as in the case of Siedlce, completely destroyed. The German soldiery, trained for years in Jew-hating, were merciless in seizing Jewish property, imprisoning and executing communal leaders, and drafting men and women for hard labor. The army refused the Jews food or medical supplies, the Poles either were in no position to aid or were themselves Jew-haters; and both hunger and disease took their heaviest toll from Jewry. William MacDonald, Quaker relief representative, said of Warsaw in late October: "The worst famine occurred in the Jewish quarter, where thousands still are buried beneath the ruins." Reports are conflicting on the prevalence of typhus; but the official German news-service (D.N.B., November 19), defending the erection of ghetto barricades in Warsaw, said that its Jews "constitute one of the most dangerous sources of disease," and other reports (Jewish Telegraph Agency) told of 800 deaths from typhus for November and 1200 cases in the Warsaw Jewish hospital in early January, 1940. The general disaster may be gauged by the flight of over a half-million Jewish refugees to Soviet Poland and to the border states of Lithuania and Rumania. Themselves the embodiment of misery, the refugees inflicted additional hardships on the communities which aided them to flee or gave them shelter.

The victory of the German army merely substituted for war the horrors of a German peace. A reliable first-hand summary of what this meant was furnished by Isaac Giterman, director of the American Jewish Joint Distribution Committee's relief activities in Warsaw during the past twenty years. "There were 18,000 Jews in Jaroslaw," he reported on November 28, "more than 20,000 in Wloclawek, 15,000 in Zamosc, and 10,000 in Ostrolenka who were given only a few hours—in some cases minutes—to leave their home towns. The fact that the Jews of Pultusk were ordered to leave on 20 minutes' notice was not the worst calamity that befell them. No less than 50 smaller towns could be added to this list. Within a few hours 75 communities were burned down completely, 150,000 Jews were evicted from their homes, and the houses of more than 100,000 Jews destroyed by fire." The allusion to Pultusk is no doubt explained by referring to the New York Times report (November 6) that in this town one male from every Jewish household was shot. In some localities, such as Bendzin and Fallenica, the Jewish sections were set on fire and their inhabitants shot down while attempting to escape from the flames. Through November and December massacres were re-

ported in Przemyśl (800 victims), Blowie, Lodz, Konskie, Shmielnik, Dynow (200 victims), and a number of other towns, particularly in west Galicia. "The moral and physical sufferings," concludes Giterman, "of those who remain under German rule are indescribable."

With the establishment of "peace," however, something like a coherent picture has emerged. Poland has been divided into three parts: the western provinces have been incorporated into Germany proper; the central provinces constitute a Gouvernement-General occupied by Germany; and the eastern provinces have been annexed by Soviet Russia, exclusive of the territory around Wilna which has been given to Lithuania.

Approximately 1,300,000 Polish Jews remain in the territory annexed or occupied by Germany. They are being ruthlessly evacuated from the western provinces and concentrated in Warsaw (which despite its losses through war and flight now contains 500,000 Jews), and in a small district centering around Lublin. The Lublin district, termed a "Jewish reservation," has likewise received some 50,000 Jews expelled from Austria and the Czech protectorate. According to its present plans, the German government intends to crowd into this barren region—Oswald G. Villard (N. Y. Times, Jan. 6, 1940) calls it "the greatest concentration camp in history"—the entire 600,000 Jews of Germany, Austria, Czechia, and Western Poland by the spring of 1940. The victims arrive in cattle cars, nearly penniless and without adequate winter clothing or blankets. They are housed in barns, stables, and war-ruined Polish homes. Men and women are compelled to work in the open 12 hours a day under prison discipline. They possess neither food, crops, funds, nor means of making a living. "For deliberate wholesale murder," writes Mr. Villard, "I know nothing in history to surpass this atrocity." If the present policy continues, he is convinced the Jewish reservation "will become one vast charnel house."

Elsewhere in German-controlled Poland the war against the Jews was relentlessly pursued. It followed the pattern familiar in Nazi Germany for the past seven years, except that its methods were more brutal and humiliating. Its object was similar—the elimination of the Jewish population, difficult as it might appear in view of the million and more victims involved and the impossibility of mass emigration. But starvation, disease, and massacre were calculated to take the place of emigration. Reports from various regions in western and central Poland (too numerous and detailed for citation) confirmed that the Jews were systematically robbed of their property and personal belongings. Community fines, state requisitions, pillage, and the declaration of possessions beyond a total value of \$400 have facilitated this process. Concentration camps, mass arrests, mass evictions, beatings, tortures, and killings have been used as means of collection. Suicides, too, have helped. Next, the Jews were systematically deprived of all opportunity to earn a livelihood. Where they continue to live by their own means, it is through the sale of existent stocks of merchandise (at derisory prices) which they are forbidden to replenish. Thousands have been drafted for compulsory hard labor under cruel discipline. Self-aid institutions, such as free-loan associations, trade schools, health camps, and orphanages, have been destroyed. Ghetto barricades, a rigorous

curfew, and the compulsory display of a yellow badge have been inaugurated to humiliate and degrade the Jews. Their religion has been desecrated by the destruction of synagogues, often to the accompaniment of sacrilegious and sometimes murderous mockery. The Poles, although companions in misery, have been encouraged to badger and rob their Jewish compatriots.

At the outset of the winter it was conservatively estimated that 80 per cent of the Jews were in dire need of food, clothing, fuel, shelter, or medical supplies. The German authorities have themselves refused, and forbidden the Poles, to give any aid; the German Red Cross in fact broadcast an attack upon the Jews. Adequate help from abroad was prevented by this refusal. Just after the close of the year, Clarence Pickett, director of the American Friends Service Committee, stated that Quaker relief for Poland had been blocked by the inability to secure proper supervision that would guarantee the distribution of supplies among the Jewish population. The American Red Cross was frustrated by the same obstacle. Writing in the *December Survey Graphic*, John F. Rich, secretary to the Quaker committee in Poland, foretold despondently: "If this attitude toward the Jews [by the German authorities] is applied throughout German-held Poland, an appalling story of mass starvation will be recorded." So far, the sole relief available has come through the American Jewish Joint Distribution Committee which has managed to dispense 50,000 free meals daily. In sum, the outlook for the 1,300,000 Polish Jews in German Poland and the scores of thousands more who have been or are slated to be driven there is merciless extermination. Their only hope, slim enough, lies in sufficient foreign relief to tide over some considerable number of them until an Allied victory gives a reborn Polish government the opportunity to make good its word and assure them of a future.

In Soviet Poland, over 500,000 refugees from across the German line have joined the 1,500,000 native Jews of the eastern provinces. At times the rush of émigrés was so great the border was closed, and thousands were stranded destitute in a no-man's land. Reports up to the end of the year indicated that 300,000 homeless were massed in Lwow, 120,000 in Galicia at large, 60,000 in Bialystok, 60,000 in Rovno, 40,000 in Lutsk and Kovel, and 40,000 on the Soviet side of Przemyśl. The Soviet authorities permitted local relief activities, including the raising of funds and the assistance of the American Jewish relief agency. Insufficient clothing, shelter, and fuel have made terrible inroads upon their numbers, despite the government's endeavor to provide one meal daily. Although detailed news is lacking, it may be presumed that the Jewish population, old and new, of Soviet Poland has been treated on a parity with other Soviet inhabitants. They have lost, or will lose, ownership of all private enterprises and productive property; they are submitted to the same liberty in the use of their native language and the same shackles in the practice of their religion and conscience as Soviet citizens elsewhere. In accordance with Soviet usage, numbers of Zionists, Socialists, liberals, and businessmen have been imprisoned or despatched to unknown destinations in the interior of Russia. In general, however, for any Jew who valued his life, Soviet "freedom" was preferable to German "peace."

The last fragment of dismembered Polish Jewry, the 85,000 Jews of Wilno and environs, were consigned to Lithuania on October 10. Its number has been increased by about 50,000 refugees. During the early weeks of their flight and the Lithuanian government's efforts to absorb and tranquilize its newly acquired territory, suffering was widespread. The newcomers were ragged and penniless; the residents had insufficient means to take care of even themselves; and administrative chaos led to shortages of food, fuel, housing, and other necessities. Local Polish patriots, particularly the reactionary Endeks, eased their sense of defeat by attacking, robbing, and killing the Jews. Food riots likewise ended in fatalities. But by December order was firmly established and relief work was functioning. Isaac Giterman (cited above) reported on November 29: "Nobody suffers any longer from hunger in the Wilno region, nor will anybody—we hope—suffer cold after the distribution of warm clothing. Our relief work is being partially extended to other areas." That is to say, so long as foreign aid is forthcoming, this portion of what may now be termed a vanished *Polish Jewry* will survive.

Germany (including Austria and Czechoslovakia). Since Jan. 1, 1939 the Jews of Greater Germany have been forbidden, with negligible exceptions, to earn a living in any way. The loss of economic resources through physical damage, fines, levies, forced sales, and depreciation, has reduced the vast majority to the brink of destitution. In order to control relief work and use it as an auxiliary thumbscrew, the government seized title to all Jewish communal funds and property. At the end of the year the Reich Organization of German Jews reported that of the 185,000 Jews remaining in the old Reich, only 16 per cent possessed property worth \$2000 or more, and that most of the remainder had to be supported by local and foreign Jewish charities. The scope of similar relief work in Austria indicated that the percentage of property owners among its 65,000 Jewish inhabitants and the value of their possessions were considerably less.

Virtual ghettos were formed through wholesale evictions from the better quarters of German cities and mass huddling into the cheapest tenements, both actions rendered obligatory by mounting poverty when not by law. Personal liberties sank below the degrading minimum enjoyed by the remainder of the German people. Jews were forbidden access to all places of public diversion. They were barred from certain of the main streets and squares of the larger cities. Most hotels, cafés, and restaurants refused to serve them. They were constantly subject to arrest and imprisonment on trivial or no charges. Concentration camps and the issuance of passports were employed as instruments for the extortion of ransom, surrender of property, or pledge to emigrate.

After the outbreak of the war, these stringent conditions were tightened. A curfew was ordained, forbidding Jews to appear on the streets after 8 p.m. In most cities, food was sold to Jews only at a few specified stores and for a couple of hours late in the day when the better items in stock were exhausted. Ration cards for clothing were denied them. They were forbidden to possess radios or overhear broadcasts. An extra 5 per cent was levied upon their possessions toward the "atonement" fine of \$400,000,000 of the previous

year. Numbers of Jews were despatched to unknown destinations, presumably for compulsory labor service.

Emigration before the war proceeded at the rate of about 3000 a month, and since the war at 2000 monthly. Basing its calculations on the maintenance of the latter figure and reckoning the Jewish population of Germany and Austria at 250,000, the Reich Organization of German Jews concluded in November that the resources of Jewry would last 18 months longer. "By that time," its leaders are quoted in the *N. Y. Times* (November 5) as saying, "the fate of the German Jews will be definitely settled one way or another." Apart from emigration, the alternatives they foresaw were (a) starvation if the blockade leads to a curtailment of food; (b) pogroms if Germany suffers a severe setback; (c) eventual shipment to the slow death of the Lublin "reservation" in Poland.

Upon the seizure and dismemberment of Czecho-Slovakia in March, its 350,000 Jews were doomed to the fate Germany has threatened to inflict upon all European Jewry. The measures which have comprised German-Jewish history since 1933 were enforced within a few months in the protectorate of Bohemia-Moravia, with the result that the 90,000 Jews who remained there at the end of the year were reduced to poverty or beggary. Several fortunate thousands managed to emigrate. Other thousands were consigned to hard labor and compelled to pay for their own upkeep. Further thousands—about 50,000 in all, including the victims from Vienna—were packed into cattle trains, with \$12 and 110 lb. of baggage as their fortunes, and were shipped to the Lublin "reservation." According to the latest reports, the last Czech Jew will be despatched there by Feb. 1, 1940.

In Slovakia, a puppet of Germany, the "independence" achieved in March inaugurated a reign of terror and violence against the Jews which continued with little respite throughout the year. Bratislava alone was the scene of 11 pogroms within 25 summer days. Anti-Jewish laws, patterned on German precedent, were quickly introduced. By mid-October almost all Jewish enterprises were confiscated and every male between the ages of 18 and 50 condemned to labor camps. On November 26, according to the *Frankfurter Zeitung*, the Slovakian government presented to Parliament a declaration that Jews were to be eliminated from the national life as "alien bodies"—a parliamentary mode of saying that 100,000 human beings were to be starved to death.

Elsewhere in Europe. Although overshadowed by the Polish catastrophe and German doom, developments with respect to the Jews in several other lands were grave enough.

As in previous years, the 800,000 Jews of Rumania lived under a regime of discriminations, restrictions, and extortions, and in terror of life and limb. The severest blow in 1938 was their exclusion from the minorities guarantees under the new Nationalities Statute. Thereafter the government merely "tolerated" Jewish religious, educational, and social institutions. As a further result, 225,000 Jews in 1939 were deprived of their citizenship. Under existing regulations for trades and professions, this measure likewise deprived them of earning a living; and they now face deportation, if and when the opportunity arises.

In Hungary, the law excluding Jews from all

state employment and restricting their numbers in the liberal professions to 6 per cent and in private business enterprises to 12 per cent was passed in its final form on May 3. It was originally estimated that, as a result, at least 250,000 out of the 600,000 Jews would lose their livelihoods within five years. But under cover of the war, the government has speeded up this pace. No business may now employ Jews. In the territories newly acquired from the former Czecho-Slovakia, almost the entire Jewish population of 150,000 have been reduced to beggary. It may be conservatively reckoned that one half of the Jews of Hungary now have no means of earning their bread.

Italy's attitude toward its official anti-Semitic policy has not been unlike its attitude toward the Rome-Berlin axis: loyal but ambiguous. Orthodox anti-Semitic decrees were passed. Commercial enterprises were included in the confiscatory measures already applied to industry and real estate, and the liquidation of Jewish property proceeded apace; March 12 was set as the deadline for the expulsion of all alien and denaturalized Jews; Jews were barred from journalism and restricted in other professions. On the other hand, some 3000 Jews were exempted from the restrictions of the racial legislation; while thousands of alien Jews were expelled, other thousands won reprieves and new refugees were admitted; many Jewish officers who had been dismissed from the army were allowed to rejoin. The truth appears to be that anti-Semitism did not "take" among the populace; this may be deduced from numerous expulsions from the Fascist party on the grounds of sympathy for the Jews, and from expressions of disapproval by such varied figures as poet Marinetti, Prof. Nicola Pende (an original signer of the racist manifesto), and Marshal Italo Balbo. But neither the ambiguity of the government's behavior nor the lack of popular support altered the fact that over half of Italy's 50,000 native Jews were economically ruined, that 4500 have been driven to baptism, and that the entire 20,000 Jews of Libya have lost their citizenship and 5000 of them have been conscripted for hard labor.

Palestine. The British White Paper, published on May 17, attempted to end the impasse between Jew and Arab in Palestine by severely restricting Jewish immigration and putting a term to British support of a Jewish homeland. The essentials of the document (full text in *Contemporary Jewish Record*, vol. ii, No. 3) are compressed in the following extracts:

Jewish immigration during the next five years will be at a rate which . . . will bring the Jewish population up to approximately one-third of the total population. For each of [these] five years a quota of 10,000 Jewish immigrants will be allowed. In addition . . . 25,000 refugees will be admitted. After the period of five years no further Jewish immigration will be allowed unless the Arabs of Palestine . . . acquiesce in it. The number of any Jewish illegal immigration who . . . may succeed in coming into the country . . . will be deducted from the yearly quotas. His Majesty's Government are satisfied that, when the immigration over the five years . . . has taken place, they will not be justified in facilitating the further development of the Jewish National Home by immigration regardless of the wishes of the Arab population.

The Jewish reaction to the document found voice in a declaration of the Jewish Agency for Palestine. "The new policy," it read in part, "denies to the Jewish people the right to rebuild their National Home in their ancestral country. It transfers the authority over Palestine to the

present Arab majority. It puts up a territorial ghetto for Jews in their own homeland." Arab opinion quite the contrary expressed dissatisfaction that immigration was not entirely banned at once.

Despite an unfavorable reception by the British press and denunciation by numerous leaders of British opinion, the House of Commons approved the policy by a vote of 268 to 179—with 110 deliberate abstentions by Conservative party members. On May 17 the Mandate Commission of the League of Nations declared the White Paper contrary to the Palestine Mandate. Nevertheless, three of its seven members felt that the Paper's interpretation of the mandate would be justified if unopposed by the League Council.

Since the outbreak of the war, however, the enforcement of the White Paper's immigration measures was largely held in abeyance. In the year ending Sept. 30, 1939, a total of 35,000 Jews settled in Palestine, and after that date the flow of immigration averaged about 3000 a month. Both Jews and Arabs have heartily supported Great Britain in its struggle against Germany, and conceivably this loyalty to a common cause may pave the way for better relations between the two parties most concerned in the future of the land.

Refugees. The number of Jews who fled from Greater Germany during 1939 may be estimated at nearly 120,000. It is largely these unfortunates who have been added to the ranks familiar to the world as "Jewish refugees" and who in this one year alone were dispersed among 44 countries. Joined to their number, before the outbreak of the war, were several thousand Jews from Czechoslovakia, Poland, and Italy. Thereafter, the number of Polish-Jewish refugees, chiefly sheltered in the Baltic states, the Balkans, and Palestine, has become as yet a matter of guesswork. Altogether, at the end of 1939 there were probably 340,000 Jewish refugees at large, that is to say, resident in temporary havens and dependent on Jewish relief.

Of this total number, 150,000 were stranded in the hospitable democracies of western Europe, 15,000 were sheltered in Shanghai, approximately 100,000 in eastern Europe, and 75,000 in South and Central America. The economic and military readjustments due to the war have to a great extent deprived them of assistance from the local Jewries.

Unemployment greatly enhanced by the first shock of war, repatriation of natives for war duty, the creation of internment camps (as in England, France, and Holland) have aggravated their plight. Moreover, the anti-Semitism which their presence has often awakened (and which Germany counted on, as a part of its foreign policy) served to magnify their numbers and increase their difficulties. Next to Palestine, the United States has received the largest number of refugees on a basis of permanent settlement. Yet in seven years, 1932-39, the net immigration from Germany, including non-Jews, was less than 50,000—in a country that contains a total of over 130 million inhabitants.

See INTERGOVERNMENTAL COMMITTEE ON POLITICAL REFUGEES; and ARABIA, AUSTRIA, BELGIUM, COLOMBIA, CZECHO-SLOVAKIA, GERMANY, HUNGARY, ITALIAN EAST AFRICA, ITALY, PALESTINE, PARAGUAY, POLAND, RUMANIA, and URUGUAY under *History*.

MARVIN LOWENTHAL.

JOHNS HOPKINS UNIVERSITY. A nonsectarian institution of higher education in Baltimore, Md., founded in 1876, some divisions being for men only, others for men and women. The enrollment for the autumn of 1939 was distributed as follows: School of higher studies of the faculty of philosophy, 316; school of engineering, 56 (graduate), 315 (undergraduate); college of arts and sciences, 439; school of business economics, 100; school of medicine, 305; school of hygiene and public health, 152; afternoon and evening courses, 3078. The enrollment in the 1939 summer session was 946. The faculty numbered 736. The endowment amounted to \$30,387,195.78 and the income from all sources for 1938-39 was \$2,691,014.09. The main library contained 552,850 bound volumes. President, Isaiah Bowman, Ph.D., LL.D.

JOHNSTON ISLAND. An island in the central Pacific (16° 13' N. and 169° 50' W.), southwest of Hawaii, belonging to the United States. In accordance with the naval appropriations bill passed by Congress in 1939, the island was to be converted into an advance U.S. naval base, with facilities for air, submarine, destroyer, and mine operations.

JOHORE. See UNFEDERATED MALAY STATES.

JUGOSLAVIA. See YUGOSLAVIA.

JURIES. See LAW under *Administration*.

JUSTICE. U.S. DEPARTMENT OF. Officials of the Department in 1939 included Frank Murphy of Michigan, Attorney General; Robert H. Jackson, Solicitor General; J. Edgar Hoover, Director of the Federal Bureau of Investigation, and James V. Bennett, Director of the Bureau of Prisons. The National Training School for Boys and Federal Prison Industries, Inc., were placed under the jurisdiction of the Department on July 1, 1939. At the end of August, Attorney General Murphy announced that, because of the critical situation abroad, the Department of Justice had already started a campaign against foreign spies. Subsequently, a larger force was ordered to curb foreign propaganda and sabotage, and renewed protection was placed around large airplane plants. Several new offices were opened by the Bureau of Investigation. On Jan. 4, 1940, Attorney General Frank Murphy, who was nominated by President Roosevelt as associate justice of the U.S. Supreme Court, was succeeded as Attorney General by Solicitor General Robert H. Jackson; Judge Francis Biddle of Pennsylvania was appointed Solicitor General. See FEDERAL BUREAU OF INVESTIGATION; PRISONS. For expenditures, see the table under PUBLIC FINANCE.

KABARDINO-BALKARIAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

KALMYK AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

KANSAS. Area and Population. Area, 82,158 square miles; included (1930) water, 384 square miles. Population: Apr. 1, 1930 (census), 1,880,999; July 1, 1937 (Federal estimate), 1,864,000; 1920 (census), 1,769,257. Kansas City had (1930) 121,857 inhabitants; Wichita, 111,110; Topeka, the capital, 64,120.

Agriculture. The Kansas farmers harvested, in 1939, 18,684,600 acres of the principal crops; this was about 85 per cent of the average harvested acreage for the decade 1928-37. Wheat, on 9,713,000 acres, yielded 111,657,000 bu. (\$72,557,-

000 in estimated value on the farm). Corn, on 2,757,000 acres, gave 37,220,000 bu. (\$21,215,000); oats, on 1,366,000 acres, 21,173,000 bu. (\$6,775,000); grain sorghums, 1,316,000 acres, 11,186,000 bu. (\$6,264,000); tame hay, 739,000 acres, 994,000 tons (\$5,865,000); barley, 680,000 acres, 7,480,000 bu. (\$2,992,000); potatoes, 28,000 acres, 2,128,000 bu. (\$1,192,000).

Manufacturing. Kansas had, in 1937, 1526 manufacturing establishments (in 1935, 1492), which employed 34,128 wage earners (in 1935, 30,481), paid them \$40,513,398 (in 1935, \$31,517,670), and produced goods to the value of \$543,807,190 (for 1935, \$457,674,618), to which sum manufacture contributed \$127,347,836 (in 1935, \$108,370,655). Except for the refining of petroleum the chief manufacturing industries belonged to the group connected with the State's agriculture. Meat-packing establishments attained for 1937 an output of \$161,004,070, to which sum their processes contributed \$19,683,212. Grain mills' output of flour and other products totaled \$98,994,751. Butter-making establishments produced goods to the value of \$24,070,971. Dressers of poultry and makers of condensed and evaporated milk, of cheese, and of prepared feeds added materially to the manufacturing production. The 18 refineries of petroleum produced, in goods, \$102,490,429, to which sum their processes contributed \$15,931,388. The making of cement and of salt and the widespread types of manufacturing, such as baking and printing, accounted for much of the remaining production.

Apart from Kansas City and some other centers on which the U.S. Bureau of the Census was not at liberty to publish figures for 1937, Wichita showed the highest local total of manufactures for 1937, \$53,910,346.

Mineral Production. According to the latest data from the Bureau of Mines the yearly production of the native minerals of Kansas totaled \$154,376,403 for 1937; of this amount, petroleum made up four-sevenths, natural gas one-fifth, and zinc, coal, cement, and lead accounted for most of the remainder.

The petroleum yield fell off to some 59,587,000 barrels for 1938, from 70,761,000, in value \$88,100,000, for 1937. The decline was attributed rather to unfavorable markets for the petroleum than to any general running out of the supply in the ground. Fewer wells were completed in 1938 than in 1937, yet what exploratory drilling was done in new areas succeeded so well as to open nearly 60 new pools of various potentiality, in more than 20 counties. The output of natural gas rose to 83,890 million cu. ft. for 1937, a total great enough to prompt a considerable falling off in drilling for natural gas thereafter, since consumption had not kept pace with output; the value of natural gas produced in 1937 was estimated as \$30,376,000. The yearly shipments from mines of lead and zinc, in the form of concentrates, carried 73,024 short tons of zinc (1938), as against 80,300 tons (1937); in value, \$7,010,304 (1938), and \$10,439,000 (1937); of lead, the shipments carried 15,239 short tons (1938) and 16,008 tons (1937), or by value \$1,401,988 (1938) and \$1,888,944 (1937). The output of coal in the State diminished to about 2,560,000 net tons (1938), from 2,892,560 tons (1937), valued at \$5,612,000. Makers of portland cement, less active in 1938, shipped 3,217,497 barrels, as against 3,500,684 barrels of cement shipped in 1937; by value the totals were \$4,949,018 (1938) and \$4,482,851 (1937). Pro-

ducers of salt sold or utilized 597,909 short tons (value, \$2,565,447) in 1938.

Education. For the latest year covered by the data that follow, the academic year 1937-38, the number of inhabitants of school age in Kansas (from 5 years to 21) was reckoned as 509,124. Enrollments of pupils in the public schools numbered 386,550, which comprised both the elementary group and the high schools. Other reported enrollment of pupils totaled 10,112 in kindergartens, 3710 in junior colleges, and 20,857 in private and parochial schools. The year's expenditures for public-school education totaled \$29,249,905. This included the year's salaries of 19,212 teachers, averaging \$715.36.

Legislation. A regular, biennial session of the Legislature convened in January and ended March 31. Its appropriations to cover the needs of the next two years fell below those of the previous biennium, according to Governor Ratner, by \$500,000; it did not raise the taxes. Preserving the sales tax, it made good Ratner's campaign promise to abolish the tokens issued by the State and current in retail trade as the means for meeting the tax to fractions of a cent; the act doing away with the tokens allowed the merchants to set up some other device instead, to aid collection.

Changes in the administrative scheme of organization accompanied the return of the State to Republican government. A new Department of Social Welfare was created and put in charge of the State's charitable institutions and unemployment compensation; the Board of Administration was limited to the control of the penal institutions and the parole board. For poor aid, the Legislature set up a fund out of the residue of receipts from the sales tax; from this fund the counties and cities might obtain means to relieve poverty in their respective areas. The State institutions of education went under the control of a newly created bipartisan Board of Regents. Forty or more different offices, engaged in collecting one or another of the State's taxes and fees were fused, grouped or reshaped, so as to operate within a new Department of Revenue and Finance. To open a way for a protected civil service, the session passed a resolution offering for disposal at a popular election in 1940 a constitutional amendment to strike out the existing limit of four years on State appointments. A new game law put control of fish and game under a bipartisan board of six; it was designed to free this field from political partisan sway. The requirement that people qualifying for old-age aid give liens on their property was repealed.

Fears that the State's provisions for road-building might be found inadequate and so cause the loss of Federal contribution to this purpose prompted an enactment to assure revenue from existing taxes for the support of plans for highways: two evasions of payment of the tax on gasoline were made cause for the loss of the guilty person's automobile license, and the enforcement of the ton-mile tax on trucks was strengthened.

Political and Other Events. Payne H. Ratner was inaugurated Governor January 9. Republicans held the Governorship and the control of the Legislature, while the State's more desirable appointive offices were largely held by Democrats, in consequence of the recent period of Democratic sway. The tendency to reorganize administrative offices was present, as in other States under similar circumstances. Governor Ratner had a

problem to face soon after entering office: the prospective cost of poor-aid and of public assistance for the aged caused the passage of measures putting a special charge on the receipts from the State's tax on sales; the Governor, however, had frequently advocated, during his campaign for election, that the tax on sales be removed from foods; now, in view of the apparent need for all the receipts from the sales tax, Ratner decided to change his policy on dropping the tax on foods in particular. He made his position clear in a special message on the subject, declaring that "additional research has revealed that our relief load will in all probability continue to increase" and proposing therefore to keep the sales-tax entire.

The State Supreme Court held, April 8, that laws enabling Kansas City, Kansas, to build public parking stations were unconstitutional, as being special legislation giving corporate powers not bestowed on other like municipalities. The State's payments of unemployment compensation, or temporary aid to persons who had lost employment, started in January, out of an accumulated fund of nearly \$11,000,000 collected since the adoption by the State of this kind of social aid in 1937.

Governor Ratner announced (February 2) an agreement for the disposal of petroleum from the "stripper" wells of Montgomery and Labette counties, which the pipe lines of the Sinclair Prairie Oil Marketing Company's pipe lines had (Dec. 31, 1938) stopped taking; the company now agreed to renew its practise of receiving the small shipments made by old wells; Ratner's argument was that a pipe line, as a common carrier, owed an obligation to continue serving the shippers and could not withdraw the service at will. Kansas was reported to have more than 10,000 old wells that still produced in small quantity, and their aggregate output sufficed to make them a matter of some economic importance to the State. The newer wells, Ratner pointed out, were destined to become "strippers" in time. For these reasons he urged the need of establishing the practise of continued outlet for the old wells. Kansas took part in the concerted shutting down of the production of petroleum by the authorities in the greater number of the chief producing States east of the Rockies. The order stopping the flow of the wells in Kansas was issued August 17; permission for them to resume was given September 1. The purpose of the interruption was to strengthen the market for the product (see TEXAS).

Officers. The chief officers of Kansas, serving in 1939, were: Governor, Payne Ratner (Rep.); Lieutenant-Governor, Carl E. Friend; Secretary of State, Frank J. Ryan; Auditor, George Robb; Treasurer, Walter E. Wilson; Attorney-General, Jay S. Parker; Superintendent of Public Instruction, George L. McClenny.

KANSAS, UNIVERSITY OF. A State institution of higher education in Lawrence, Kans., founded in 1864. The enrollment in the autumn of 1939 numbered 4637, of whom 3099 were men and 1538 women. The 1939 summer session had an enrollment of 1266. The full-time teaching staff numbered 257. The endowment fund amounted to \$256,000 and the budget for the year was \$2,000,000, exclusive of buildings. There were 309,000 volumes in the library. The gift of a chancellor's residence (\$50,000) was received during the year. Chancellor, Deane W. Malott, M.B.A., inducted July 1, 1939.

KANSAS CITY. See KANSAS; MISSOURI. KANSAS WESLEYAN UNIVERSITY.

A coeducational institution in the city of Salina, Kans., and under the auspices of the Methodist Church, founded in 1885. The enrollment for the autumn of 1939 was 314, and in the summer school of 1939, 110. The faculty numbers 30. The University has successfully closed its endowment campaign, having added to its permanent endowment \$261,500. The University operates on a debt-free basis, and a pay-as-you-go plan. The library has 25,000 volumes. The new stadium project is rapidly nearing completion, and will be dedicated in the fall of 1940. President, E. K. Morrow.

KANSU. See CHINA under *Area and Population*.

KARAFUTO, kã'rã-fõõ'tõ. The Japanese part of the island of Sakhalin, south of 50° north latitude. Area, about 13,935 square miles; population (1936 estimate) 321,765. Chief towns: Toyohara, the capital, 35,849 inhabitants; Esutoru, 26,761; Shikka, 26,540; Otomari, 24,604. See SAKHALIN.

Production, etc. In 1937 fisheries production was valued at 19,108,000 yen. The value of farm production in 1937 was 9,415,000 yen (chief crops, wheat, barley, oats, potatoes). In 1937, 2,535,574 metric tons of coal were mined. The production of wood pulp in 1937 was estimated at 382,000 metric tons. Livestock (1937): 11,213 horses; 7323 cattle; 5820 pigs; 11,496 foxes. In 1936 imports from Japan Proper totaled 53,771,610 yen; exports were 173,270,406. The budget for the year ending Mar. 31, 1939, was balanced at 38,688,529 yen (the yen averaged \$0.2845 in 1938).

KARA-KALPAK AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See UZBEK SOVIET SOCIALIST REPUBLIC.

KARELIAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

KATO, kã'tõ', ADMIRAL KANJI, RET. A Japanese naval expert, died near Atami, Japan, Feb. 9, 1939. Born in 1870, he was educated at the Naval Academy (1891) and saw service in the Russo-Japanese War. Subsequently, he was naval attaché at the London Embassy, director of the Naval Gunnery School, and president of the Naval Staff College. He headed the Japanese technical delegation to the Washington Conference of 1921-22 and opposed the suggestion of scrapping capital ships. He was given command of the Yokosuka Naval Station in 1924 and during 1926-29 commanded the 1st and 2d Squadrons, when he was appointed chief of the Naval General Staff. A leader of the "big navy" faction, he opposed attendance at the London Conference in 1929 and his bitter denunciation of the London Naval Treaty led to his resignation and transfer to the Supreme War Council. He was retired on account of the age limit in 1935.

At his death Admiral Kato was believed to have been at work upon a monumental analysis of Japan's naval position.

KAZAKH SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R. It is divided in the 11 regions of Alma Ata, Aktiubinsk, East Kazakhstan, Gourev, Karaganda, Kustanai, Kzyl-Ordinsk, North Kazakhstan, Pavlodar, South Kazakhstan, and West Kazakhstan. Total area, 1,059,500 square miles; population (Jan. 17, 1939), 6,145,937. Chief cities (with 1935 populations): Alma-Ata, the capital,

197,400; Semipalatinsk, 136,400; Karaganda, 118,900. The principal agricultural products are grain, cotton, sugar beets, and apples. Livestock raising is an important industry. There are rich mineral deposits of petroleum, gold, coal, lead, zinc, chromo-nickel, copper, potassium, and borax which are being developed. The industrial plants are engaged in producing canned fruit, metals, sugar, cloth, flour, footwear, and electric power. See UNION OF SOVIET SOCIALIST REPUBLIC.

KEDAH. See UNFEDERATED MALAY STATES.

KEELING ISLANDS. See STRAITS SETTLEMENTS.

KEEWATIN. See NORTHWEST TERRITORIES.

KELANTAN. See UNFEDERATED MALAY STATES.

KENNEL CLUBS. See SPORTS under *Dogs*.

KENNELLY, ARTHUR EDWIN. An American electrical engineer, died in Boston, Mass., June 18, 1939. Born in Bombay, India, Dec. 17, 1861, he was educated privately and at University College School in London. In 1876 he became a telegraph operator, and two years later was appointed an assistant electrician at Malta. Subsequently he was chief electrician of a cable repairing steamer (1881) and senior ship's electrician for the Eastern Telegraph Cable Co. (1886).

In 1887, Kennelly came to the United States as principal electrical assistant to Thomas A. Edison, and in 1894 he joined with Edwin J. Houston in forming the firm of Houston & Kennelly, Philadelphia. During this partnership, they were co-authors of several authoritative works, including *Elementary Electro-Technical Series* (1897), *Electro-Dynamic Machinery* (1898), *Recent Types of Electro-Dynamic Machinery* (1899), *Electricity Made Easy* (1899), and *The Interpretation of Mathematical Formulae* (1899).

The partnership was dissolved in 1901, and in the following year, Kennelly went to Harvard University as professor of electrical engineering, and in this same year he was the engineer in charge of the laying of the Vera Cruz-Frontera-Campeche cables for the Mexican Government. In 1913 he took on the additional duties of professor of electrical engineering at the Massachusetts Institute of Technology, where during 1917-19 he was director of electrical engineering research and chairman of the faculty. He was retired as emeritus in 1924. Dr. Kennelly was the first exchange professor to French universities in applied science (1921-22), and during 1924-30 was a research associate of the Carnegie Institution. In 1930 he was retired as professor emeritus at Harvard.

Interested in his profession, Dr. Kennelly was president of the American Institute of Electrical Engineers (1898-1900), of the Illuminating Engineering Society (1911), and of the Institute of Radio Engineers (1916), and held membership in many scientific societies here and abroad, including the National Research Council and the National Academy of Science. He attended the International Electrical Congresses in Paris (1900, 1932), and St. Louis (1904), the Radio Conference, Paris (1921), and the International Radio Conference, Washington (1927) as a delegate. Besides several honorary degrees, Dr. Kennelly received the Howard Potts gold medal and the Edward Longstreth silver medal of the Franklin Institute, the gold medal of the Institute of Radio Engineers (1932), and the Edison gold medal of the American Institute of Electrical Engineers (1933) for "meritorious achievement in electrical

science, electrical engineering, and electrical arts." In 1936, he received the Mascart Medal.

Regarded as an authority, especially on the use of magnetism in engineering and on alternating electric currents, he wrote *Theoretical Elements of Electro-Dynamic Machinery* (1893), *Wireless Telegraphy* (1907), *The Application of Hyperbolic Functions to Electrical Engineering Problems* (1911), *Tables and Atlas of Complex Hyperbolic Functions* (1914), *Artificial Electric Lines* (1917), *Les Applications élémentaires des Fonctions hyperboliques* (1922), *Electrical Vibration Instruments* (1923), *Vestiges of Premetric Weights and Measures Persisting in Metric-System Europe* (1926-27), and *Electric Lines and Nets* (1928).

KENTUCKY. Area and Population. Area, 40,598 square miles; included (1930) water, 417 square miles. Population: Apr. 1, 1930 (census), 2,614,589; July 1, 1937 (Federal estimate), 2,920,000; 1920 (census), 2,416,630. Louisville had (1930) 307,745 inhabitants; Frankfort, the capital, 11,626.

Agriculture. Kentucky harvested, in 1939, 5,219,600 acres bearing principal crops. More than half of this total was in corn. On 2,816,000 acres, corn yielded 70,400,000 bu. (estimated farm value, \$42,944,000); tobacco, on 373,600 acres, 320,668,000 lb. (\$45,807,000); tame hay, 1,367,000 acres, 1,582,000 tons (\$14,080,000); wheat, 354,000 acres, 4,071,000 bu. (\$2,972,000); potatoes, 46,000 acres, 3,864,000 bu. (\$3,168,000); sweet potatoes, 24,000 acres, 1,968,000 bu. (\$1,673,000).

Manufacturing. Kentucky had, in 1937, 1624 manufacturing establishments (in 1935, 1621), which employed 68,998 wage-earners (in 1935, 60,809), paying them wages to the sum of \$66,248,664 (in 1935, \$53,058,233), and producing goods to the value of \$504,897,342 (in 1935, \$450,675,686), to which amount the processes of manufacture contributed \$181,895,666 (in 1935, \$166,386,487). Among the classifications, covering somewhat over one-half of the total of manufactures for 1937, published by the U.S. Bureau of the Census, the making of distilled liquor held the lead: 52 establishments, employing 2070 wage-earners, attained an output of the value of \$40,314,833, to which amount the processes of manufacture contributed \$12,644,674. The product of the meat-packing establishments totaled \$22,876,134. The output of refineries of petroleum amounted to \$20,954,056. The important production of cigarettes and of tobacco for smoking and other use was not totaled for the State. Louisville, the chief industrial center and the home of many of the leading lines of manufacture, produced manufactured goods in 1937 totaling \$294,210,542, or 58 per cent of all the State's production of such goods in that year: its 536 manufacturing factories employed 32,986 or nearly half of the wage-earners in the manufacturing industries of Kentucky, and paid them \$33,917,510, or more than half of the total pay of such wage-earners throughout the State.

Mineral Production. Of the \$127,403,680 that formed the yearly total, for 1937, of the production of native minerals of Kentucky, coal furnished more than two-thirds, and natural gas provided the greater part of the rest. The mining of coal declined thereafter, the quantity produced falling to some 38,496,000 net tons (1938) from the 47,086,444, in value \$86,639,000, of 1937. The natural-gas wells in the State delivered for customers' use 55,719 million cu. ft. in 1937; in value,

at points of consumption, \$22,904,000. The wells of eastern Kentucky, situated in a region of high demand for gas, regulated their yield to match the customers' demand. In western Kentucky, on the contrary, for lack of local customers, natural gas when discovered found no ready market; though not sought, natural gas was discovered in the western counties from time to time in the search for petroleum. The production of fluorspar, dependent chiefly on demand from steel-makers, fell sharply to 43,000 short tons for 1938, from 87,000 tons, in value \$1,710,122, for 1937; the mines' sales dropped more sharply still.

Political and Other Events. The application of a recent law of the State, regulating wages and hours of employment for women and children, led to the making of a set of rules affecting industries of an intrastate character. The minimum rate for wages was set at 25 cents an hour, applicable to 48 hours a week, and at 37½ cents an hour for additional weekly time, by an order of January 14; but a later order set different minima for the basic rate in each of three zones, into which the State was divided for this purpose, the three rates being 20, 22½, and 25 cents.

Governor Chandler, who had lost a campaign in 1938 to obtain the Democratic nomination for U.S. Senator, obtained the State's other Senate seat after the death of the incumbent, M. M. Logan (Oct. 3). To this end, Chandler resigned as Governor, October 9, and was immediately appointed Senator by his own successor, the former Lieutenant-Governor. The new Governor, Keen Johnson, had lately won the Democratic nomination as candidate for Governor, at a primary election held on August 5, defeating U.S. Representative J. Y. Brown, whom the CIO supported. See also *Elections*, below.

The strike of the United Mine Workers (affiliate of the CIO) in the Eastern bituminous-coal mines in April and May included the coal fields of Kentucky, interfering for several weeks with the flow of wages and shipments. Harlan County again became the scene of shootings and beatings; on this occasion the trouble was attributed to the United Mine Workers' insistence on a closed shop and the employers' consequent yet unwelcome demand for contracts to protect them from strikes: a proposal suspected of masking schemes for introducing workers hostile to this union. The disagreement lasted much longer in Harlan County than elsewhere in the coal regions and was finally settled, July 19, by agreement on a different sort of contract, not requiring all miners to be members of the union and not carrying the "strike-penalty" clause that owners had wanted. In the intervening months troops of the National Guard, sent in by the Governor, kept down the outcrop of violence as far as possible; a grand jury of the county indicted 420 persons in connection with disorders in the course of the strike and, particularly with an encounter between the soldiers and a band of strikers' pickets; and the Federal Government prepared to renew the prosecution of mine-owners and their guards. After the strike had ended in agreement, the county's circuit court dismissed the 420 indictments (October 1), and the Federal indictments against 52 remaining defendants were dropped.

The State Court of Appeals decision (see *YEAR BOOK*, 1937, p. 379) against the validity of the State's ratification of the proposed Federal Amendment to control the labor of the young was reversed, June 5, by the U.S. Supreme Court.

The State Court of Appeals held (March 21) that the State's tax on chain stores, producing \$276,000 a year of revenue, was invalid, as imposing, as between different sorts of stores, discriminations baseless in the absence of any declaration in the law of a purpose to tax for other objects than revenue. Another decision of the same court, in January, restricted further borrowing by cities and counties, requiring them to use the actual revenue from their taxes, instead of possible revenue to come, in finding constitutional limits of power to borrow. At Hopkinsville ten indictments were brought, charging mistreatment of inmates at the Western State Hospital. See *PRISONS*.

Efforts of Negroes to establish a right to use the means of education offered to the whites by the colleges were discussed (March 11) by Governor Chandler at a conference in Frankfort; he declared that the constitution of the State prohibited Negroes' attending the white schools and asserted that his administration had led the way in providing money to pay for educating Kentuckian Negroes in other States' schools.

A mountain flood in Eastern Kentucky took 63 lives on the night of August 4, among settlements at the bottoms of narrow hollows that were suddenly filled by their streams; about a thousand families' homes were carried away.

Elections. Keen Johnson (Dem.), Chandler's successor as Governor, was elected Governor for the next term, November 7, easily defeating King Swope (Rep.). He was inaugurated, as elected Governor, December 12.

Officers. Kentucky's chief officers, serving in 1939, were: Governor, A. B. Chandler (Dem.; resigned October 9); Lieutenant-Governor and (succeeding Chandler October 9) Governor, Keen Johnson (Dem.); Secretary of State, Charles D. Arnett; Treasurer, John E. Buckingham; Attorney-General, Hubert Meredith; Auditor, Ernest E. Shannon; Commissioner of Agriculture, Labor, and Statistics, Garth Ferguson; Superintendent of Public Instruction, Harry W. Peters.

KENTUCKY, UNIVERSITY OF. A coeducational State institution of higher learning in Lexington, Ky., founded in 1866. The enrollment in the autumn of 1939 was 3800. There were 2370 students registered in the 1939 summer session. The faculty numbered 332. The productive funds amounted to \$184,075, and the income for the year was \$1,560,724. The library contained 254,227 volumes. New buildings completed or nearing completion were the Biological Sciences, Home Economics, the Women's Residence Halls, and the Army. President, Frank LeRond McVey, Ph.D., LL.D., L.H.D.

KENYA, kē-nyā' or kēn'ya. A British East African colony and protectorate. Area, 224,960 square miles. Total population (Jan. 1, 1939, estimate), 3,365,888 including 3,280,774 natives, 20,894 Europeans, 44,635 Indians, 14,077 Arabs, and 3734 Goans. Chief towns: Nairobi, the capital, 61,000 inhabitants; Mombasa, 50,000. Education (1938): 1977 schools (exclusive of some Koran schools at the coast) and 141,417 pupils.

Production and Trade. Coffee, wheat, maize, tea, sugar, hides and skins, cotton, coconuts, wattle bark, sodium carbonate, timber, and gold are the principal products. The output of gold in 1938 was valued at £499,601. For customs purposes, Kenya and Uganda are a single administrative unit—the chief imports being cotton piece goods and manufactures, motor vehicles, oils, machinery,

and building materials. Coffee, gold, cotton, tea, carbonate of soda, and sisal were the main exports. In 1938, imports (Kenya and Uganda combined) were valued at £9,667,030; exports (Kenya only), £3,835,684. In addition to the above mentioned external trade there is an interchange of imported and locally produced goods among Kenya, Tanganyika, and Uganda.

Communications. The harbors and railways of Uganda and Kenya are state-owned. A total of 1625 miles of meter gauge railway line was in operation during 1938, and 1,050,881 tons of freight and 892,471 passengers were carried. The government operates a marine service on lakes Victoria, Kioga, and Albert, and on the river Nile. There were, in 1938, over 10,814 miles of roads. Shipping entered and cleared the ports of Kenya during 1938 aggregated 4,697,252 net registered tons. Kenya is served by the air services between Great Britain and South Africa operated by Imperial Airways. Other air services link the chief towns of Kenya and other East African towns.

Finance. For 1938, gross revenue totaled £3,776,030; gross expenditure, £3,876,952. Net figures are obtained by deducting reimbursements from neighboring territories in respect of joint services from Kenya and Uganda railways and harbors for loan interest and from other sources on account of services which are not a charge against the colony's local revenues. Therefore, the 1938 accounts show a net revenue of £2,545,775 and a net expenditure of £2,646,697. The figures for 1938 are not strictly comparable with 1937, owing to a change in accounting procedure in which certain non-liquid assets were charged to expenditure. Total public debt amounted to £17,580,600 of which £13,251,808 represented the capital debt of Kenya and Uganda railways and harbors.

Government. The supreme executive power for the whole country is in the hands of a governor who is advised by an executive council. There is a legislative council of 41 members (the governor as president, 11 ex-officio, 9 nominated official, 11 European elected, 5 Indian elected, 1 Arab elected, 1 nominated unofficial to represent the Arab community, and 2 nominated unofficial to represent the African community). Any measure passed by the legislative council may be vetoed by the governor. Sir Robert Brooke-Popham, the governor, resigned during September, 1939, in order to take up duties with the British Royal Air Force. He was succeeded by Sir Henry Monck-Mason Moore.

History. At the opening of the legislature during April, 1939, the governor, Sir Robert Brooke-Popham, in his speech reviewed defense measures and stressed the position of Kenya as a part of the Middle East area of operations. He said that a complete scheme for a supply of reinforcements to Kenya in time of need had been worked out. It was announced during August, 1939, that the British Colonial Secretary had approved an application from the government of Kenya to include among the next government loans a sum of £250,000 for the purpose of establishing British settlers in Kenya. A sum of £30,000 was provided from the Colonial Development Fund for a mineralogical and geological survey of 16,000 square miles of Kenya in which traces of minerals have been reported.

KENYON COLLEGE. A college of arts and sciences for men in Gambier, Ohio, established in

1824 by the Protestant Episcopal Church. The enrollment for the autumn term of 1939 was 312 students and 4 special students. The faculty numbered 38 members. The endowment funds amounted to \$1,757,273, and the income for the year was \$259,414. The library contained 59,910 volumes and 50,000 government pamphlets. During 1939 the theological faculty and curriculum were expanded. President, Gordon Keith Chalmers, M.A. (Oxon.), Ph.D., Litt.D.

KIANGSI. See CHINA under *Area and Population*.

KIANGSU. See CHINA under *Area and Population*.

KIDNAPPING. See FEDERAL BUREAU OF INVESTIGATION.

KINDERGARTEN ASSOCIATION, NATIONAL. An organization founded and incorporated in New York City in 1909, with the object of helping to secure the advantages of kindergarten education for all of the nation's children. The Association is supported entirely by voluntary gifts. The money is used for the purpose of promoting a knowledge of and an interest in the value of the kindergarten as an integral part of the public school system. Field Secretaries are employed in every State to keep this matter before the public and assist parents in having classes organized for their children.

The Association has been instrumental in securing the establishment to date of 2302 kindergartens, which have enrolled over 920,780 children. Where no adequate provision has been made in the State school laws for the maintenance of kindergartens, the Association has worked to stimulate an effort to secure the enactment of improved laws and has been instrumental in obtaining their passage in 17 instances.

Early in 1939 Senator Wagner of New York (Dem.) and Senator Davis of Pennsylvania (Rep.), at the request of the Association, jointly introduced a kindergarten amendment to the Harrison-Thomas-Larrabee Bill. Later, Senator Pepper of Florida and Congresswoman O'Day of New York, also at the Association's request, introduced the Kindergarten Bill, S.2510-H.R.6474. The Bill was voted out favorably by the Senate Committee on Education and Labor and will be on the Senate Calendar when Congress reconvenes in 1940.

The officers of the Association are: Maj. Bradley Martin, president; Hon. P. P. Claxton, honorary president; Miss Lena Madesin Phillips, vice-president; Mrs. Roger C. Aldrich, secretary; Miss Bessie Locke, executive secretary; and Julian M. Gerard, treasurer. Headquarters are at 8 West Fortieth Street, New York City.

KINDERGARTENS. See SCHOOLS, ELEMENTARY AND SECONDARY; PSYCHOLOGY.

KINETICS. See CHEMISTRY.

KINGMAN REEF. See NEW INTERNATIONAL YEAR BOOK, 1938, p. 376.

KIRGHIZ SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R. Area, 75,950 square miles; population (Jan. 17, 1939), 1,459,301. Capital, Frunze (86,300 inhabitants in 1936). A considerable portion of the country is mountainous so that livestock raising in the mountain pastures is the main branch of agriculture. The fertile fields at the base of the mountains are cultivated and irrigated, the chief crops being wheat, sugar beets, hemp, tobacco, and cotton. Petroleum, coal, and lead are mined, and important deposits of radium, anti-

mony, mercury, and indium have been found. See UNION OF SOVIET SOCIALIST REPUBLICS.

KIRIN. See CHINA under *Area and Population*.

KIWANIS INTERNATIONAL. An organization of clubs made up of not more than two of the leaders in each business and profession, united for the rendering of civic and social service to the community. The first club was organized in Detroit, Mich., in 1915; by 1917 the organization had spread into Canada. At the close of 1939 the international organization consisted of over 2060 clubs with a membership of over 104,000. The objectives for the year 1939-40 were: 1. Service to under-privileged children; 2. Boys' and girls' work; 3. Vocational guidance; 4. Establishing closer relations between rural and urban communities; 5. Encouragement of intelligent, aggressive and serviceable citizenship.

Citizenship activities were: 1. Support of churches in their spiritual aims; 2. Initiation and support of constructive policies of conservation; 3. Co-operation in law observance and enforcement; 4. Continued interest in public safety; 5. Furnishing a broader knowledge of the fundamentals of popular government and the responsibilities of citizenship; 6. Maintenance of the international good will existing between the Dominion of Canada and the United States of America.

The 1940 convention will be held in Minneapolis, Minn., June 16 to 20. The officers for 1939-40 are: President, Bennett O. Knudson, Albert Lea, Minn.; Immediate Past President, H. G. Hatfield, Oklahoma City, Okla.; Vice-Presidents, Charles S. Donley, Pittsburgh, Pa., and Robert J. Prittie, Winnipeg, Manitoba; Treasurer, Dr. W. Eugene Wolcott, Des Moines, Ia.; Secretary, Fred. C. W. Parker, Chicago. Headquarters are at 520 North Michigan Avenue, Chicago, Ill.

KNIGHTS OF COLUMBUS. A society of Roman Catholic men organized under a special charter, granted by the Connecticut General Assembly in 1882, permitting it to do business as a fraternal benefit society and to promote and conduct education, charitable, religious, and social welfare work. The four principles of the order are charity, unity, fraternity, and patriotism.

The order is composed of a supreme council, the governing body and highest authority; a supreme board of directors, the executive body; 64 state councils; and 2465 subordinate councils. The total membership as of June 30, 1939, was 427,344, which represented an associate membership of 206,164 and an insurance membership of 221,180. In the 56 years of its existence the Society has paid out more than \$55,000,000 to the beneficiaries of its members. Death claims paid during the fiscal year amounted to \$2,874,368.27.

The annual convention was held in Seattle, Wash., August 15-17, 1939. The officers were Francis P. Matthews, of Omaha, Neb., supreme knight; Joseph F. Lamb, of New York, supreme secretary; and D. J. Callahan, of Washington, D. C., supreme treasurer. The order publishes *Columbia*, a monthly magazine. Headquarters of the supreme council are in New Haven, Conn.

KNIGHTS OF PYTHIAS. A North American fraternal order founded in Washington, D. C., in 1864 on the basic principles of Friendship, Charity, and Benevolence. The order is comprehended in 56 grand lodges or grand domains with about 5000 subordinate lodges, of which 4800 are in the United States. Its total assets are estimated

at upwards of \$30,000,000. During 1939 the Knights of Pythias expended approximately \$2,000,000 for relief purposes, exclusive of the maintenance of sixteen Pythian homes for aged members, their wives, widows, and children. The Supreme Chancellor is E. Lee Stapp, Miami, Fla.; Keeper of Records and Seal, Harry M. Love, 1054 Midland Bank Bldg., Minneapolis, Minn.

KOMI AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

KOREA (CHOSEN). A former empire of eastern Asia, annexed by the Japanese Empire on Aug. 22, 1910, and incorporated as an integral part of Japan by an Imperial Rescript of 1919. Capital, Keijo (Seoul).

Area and Population. Area, 85,228 square miles; population on Dec. 31, 1936, 22,047,836 (natives, 21,373,572; Japanese, 608,989; foreigners, 65,275). Populations of the chief cities on Dec. 31, 1936, were: Keijo (Seoul), 677,241; Fusan, 206,386; Heijo (Pyongyang), 180,421; Taikyu, 108,669; Jinsen (Chemulpo), 100,303.

Education and Religion. About 60 per cent of the adult inhabitants are illiterate. School enrollment figures for May, 1937, were: Elementary, 988,993; secondary, 42,479; vocational, technical and special, 22,928; collegiate, 5252; university, normal and preparatory, 4735. Korean students studying in Japan numbered 6397 on Oct. 1, 1936. Buddhism and Confucianism are the chief religions. There were 4752 Christian missions, with 3195 missionaries and 498,626 adherents at the end of 1936.

Production. Of the total population, 16,542,735 are engaged in agriculture and forestry. Production of the chief crops in 1938 was (in metric tons): Rough rice, 4,515,500; wheat, 285,300; barley, 1,121,300; oats, 37,200; corn, 95,600; potatoes, 802,400 (1937); tobacco, 28,000; cotton-seed, 91,100; soybeans, 506,900; cotton, 40,600; hemp, 18,000 (1937); raw silk, 1253 (1936). Fisheries' production in 1936 was valued at 77,900,000 yen; minerals, 100,429,655 yen (gold, 59,353,700; coal, 13,301,000; pig iron, 7,866,600; steel, 6,533,000). Copper, silver, lead, and tungsten are other minerals produced. Manufacturing production in 1936 was valued at 730,807,000 yen.

Foreign Trade. Merchandise trade with other parts of the Japanese Empire in 1938 was: Imports, 921,300,000 yen; exports, 710,500,000 yen. Merchandise imports from foreign countries were 132,700,000 yen; exports, 169,100,000 yen. Over three-fourths of all trade was with Japan proper. Rice, fertilizers, heavy iron, and other minerals were the chief exports.

Finance. Budget estimates for the fiscal year ended Mar. 31, 1939, placed total revenue at 505,159,000 yen and expenditure at 518,915,000 yen. The public debt on Mar. 31, 1937, was 549,731,000 yen. The yen exchanged at \$0.2845 in 1938 and \$0.2596 in 1939.

Communications. With 2220 miles of line, the state railways in 1936-37 carried 33,708,178 passengers and 9,980,227 metric tons of freight. Roads and highways (1939) extended 14,414 miles. The entire length of the Heijo-Manpochin railway, built since 1935 at a cost of 8,500,000 yen, was opened to traffic Feb. 1, 1939. Airlines connected Keijo (Seoul) with the other chief cities of Korea, Japan, Manchoukuo, and North China. During 1937 14,231 steamships of 13,008,990 tons entered Korean ports from Japan and the Empire and 1289 ships of 1,728,972 tons from

foreign countries. With completion of the first stage of the Tashito harbor works at the mouth of the Yalu River, the government in June, 1939, proclaimed it an independent port. Work had been under way since 1936.

History. The Oriental Consolidated Mining Co., the last big U.S. concession in Korea, sold its gold mining interests early in September, 1939, to the Japanese-owned Nippon Mining Co. for \$8,174,500. The Japanese army was opened to Korean volunteers for the first time in 1939 and 600 responded, according to Governor-General Jiro Minami. In an interview with an American writer, in August, 1939, General Minami declared his aim was the complete Japanizing of Korea and its people. He estimated that it would be about 30 years before the Japanizing process would reach the point where the Koreans could be entrusted with representation in the Imperial Diet on the same basis as the Japanese.

KRASNOYARSK TERRITORY. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.
KRESS COLLECTION. See ART MUSEUMS; BENEFRACTIONS.

KRUPSKAYA, NADEJDA K. A Soviet educationalist and the widow of Nicolai Lenin, died in Moscow, Feb. 27, 1939. Born in St. Petersburg, Feb. 26, 1869, she was educated at the Woman's College there. Attracted first to the philosophy of Tolstoi and then to that of Marx, she taught her revolutionary ideals during 1891-96 under the guise of geography. Participating in a strike in 1896 as a member of the Social Democratic Party she was arrested and exiled to Siberia where she was married (1898) to Lenin, whom she had met in 1893.

After her release she went to Munich where she was later joined by her husband. She served as secretary of *Iskra* (1901) and later of the Central (Foreign) Organization. After the revolution of 1905 they returned to Russia and Mme. Krupskaya became secretary to the Central Committee of Bolsheviks, but the next year saw them again in exile, and it was not until the overthrow of the Czar in 1917 that they were able to return to Russia.

After Lenin came into power, she drew up the Party plan for education, became a member of the People's Commissariat of Education and founded the Bureau for Political Training. After Lenin's death in 1924 she went into partial retirement, but on Jan. 28, 1938 she was given membership in the Presidium of the Supreme Soviet (Parliament). At her death she was a member of the central committee of the Communist Party, and vice commissar of Education of the Union of Soviet Socialist Republics.

KU KLUX KLAN, KNIGHTS OF THE. An American benevolent, eleemosynary, and fraternal institution, incorporated under the laws of the State of Georgia in 1915. "The membership is made up of white, Gentile persons, native-born American citizens, 16 years of age. They must be of sound mind, good character, commendable reputation, and of the Christian religion; and must owe no allegiance to any foreign government, nation, institution, sect, ruler, prince, potentate, people, or person, their allegiance, loyalty, and devotion to the government of the United States of America being unquestionable." At the biennial legislative meeting held in June, 1939, James Arnold Colescott was elected president to succeed Dr. Hiram Wesley Evans, and J. M. George was elected treasurer to succeed Sam H.

Venable, deceased. National headquarters are in Atlanta, Ga.

KUOMINTANG. See CHINA under *History*.

KUWAIT. See ARABIA.

KWANGCHOWAN (KWANGCHOW). See FRENCH INDO-CHINA.

KWANGSI. See CHINA under *Area and Population*.

KWANGTUNG. See CHINA under *Area and Population*.

KWANTUNG, kwän'dōōng'. The territory at the southern extremity of the Liaotung Peninsula, Manchuria, leased from China by Japan. Area, including adjacent islands, about 1337 square miles; population, 1,680,627 (Dec. 31, 1936), of whom 1,273,503 were Manchoukuoans and 369,744 were Japanese, with 34,812 Koreans and 2568 foreigners. Chief towns (with Oct. 31, 1937, populations): Dairen, the capital, 551,160; Pulantien, 187,166; Port Arthur (Ryojun), 143,782; Chinchou, 136,319.

Production, etc. The production of chief crops in 1937 in metric tons was: Groundnuts, 79,000; soybeans (1936), 17,700; maize, 132,100; potatoes, 4300; rice, 2700; wheat, 1300. The sea-fisheries catch in 1936 was valued at Y5,800,000. The salt output for 1936 amounted to 413,084 metric tons. In 1936 imports were valued at Y680,061,785; exports, Y451,798,860. Japan supplied Y515,261,975 of the imports and received Y183,943,117 of the exports. The ordinary budget for the year ending Mar. 31, 1939, showed receipts of Y17,590,514 and expenditures of Y15,409,481 (yen averaged \$0.2845 in 1938). Governor-General, Gen. Kenkichi Uyeda. See JAPAN and MANCHOUKUO.

KWEICHOW. See CHINA under *Area and Population*.

LABOR. See AMERICAN FEDERATION OF LABOR; CHILDREN'S BUREAU; CONGRESS OF INDUSTRIAL ORGANIZATIONS; LABOR CONDITIONS; LABOR LEGISLATION; NATIONAL LABOR RELATIONS BOARD; OLD-AGE PENSIONS; RELIEF; SHIPPING; SOCIAL SECURITY BOARD; UNITED STATES CONCILIATION SERVICE; UNITED STATES EMPLOYMENT SERVICE; WAGE AND HOUR DIVISION; WOMEN'S BUREAU; also, MICHIGAN, NEW YORK, AND OREGON; UNITED STATES under *Departments and Agencies*.

LABOR, AMERICAN FEDERATION OF. See AMERICAN FEDERATION OF LABOR.

LABOR, U.S. DEPARTMENT OF. Frances Perkins of New York was Secretary of Labor during 1939. On July 1, the United States Employment Service (q.v.) was removed from the jurisdiction of the Department and transferred to the Federal Security Agency. For expenditures, see the table under PUBLIC FINANCE. Activities of the Department are covered in the following articles on separate divisions: CHILDREN'S BUREAU; UNITED STATES CONCILIATION SERVICE; WAGE AND HOUR DIVISION; and WOMEN'S BUREAU. See also IMMIGRATION and EMIGRATION for the Immigration and Naturalization Service. The Department includes also the Bureau of Labor Statistics under the direction of Isador Lubin, the Division of Labor Standards, and the Division of Public Contracts.

LABOR CONDITIONS. Despite the disturbing effects of chaotic international politics, labor conditions throughout the world were relatively stable in 1939. No general strikes were reported. In those countries where organized labor had not been destroyed in previous years by dic-

tatorships, trade unions successfully defended their memberships and even made organizational advances. Levels of employment and wages rose slightly. Toward the end of the year war destroyed labor standards in some of the belligerent countries. In other countries restrictions against overtime and employment of women and children were relaxed or discarded. Considered as a whole, however, the year brought no serious setbacks in the movement for improved working conditions in most of the great industrial nations of the world. In the United States the most important developments were the operation of the Fair Labor Standards Act for its first full year and the steady growth of trade agreements in the newly organized mass production industries.

Employment and Unemployment. The general level of employment throughout the world rose perceptibly in 1939 in line with the upswing which began in the years immediately following the depth of the business depression in 1932 and 1933. The gains can be attributed in part to industrial mobilization for war or preparation for war. Except for a few industries, however, statistics do not reflect any sudden spurt in employment which is commonly expected to accompany the outbreak of hostilities. To the contrary, the dislocation of industry during the transition from a peacetime to a wartime economy threw many men out of work in several countries.

Reports of the International Labor Office show that in Great Britain the total number of unemployed persons on Sept. 11, 1939, was 1,331,000 as compared with 1,232,000 on Aug. 14, 1939, an increase of 99,000. In France the number of unemployed increased from 302,479 on August 26 to 316,552 on September 23. In Belgium the number unemployed rose from 168,865 during the week ended August 26 to 235,018 in three weeks. Denmark, Greece, and The Netherlands had similar increases in unemployment. The United States, Switzerland, and a few other countries had decreases in unemployment from August to September. There was little change in the unemployment situation in Sweden.

Considering the year as a whole, the level of employment in the United States, Canada, and France was higher in 1939 than it was in 1938 but lower than it was in 1929. Employment in Germany, Denmark, Great Britain, Hungary, Italy, and the Union of South Africa in 1939 appeared not only to have surpassed 1938 levels but 1929 levels as well. The absence of reliable statistics in some countries and the wide variety of statistical methods among most of the countries make international comparisons impossible and estimates of the gains difficult, but some idea of the long-range changes in conditions are indicated in the table below.

Unemployment was a controversial political problem in Great Britain during the early part of 1939. The Labour Party moved for a vote of censure in the House of Commons in February, but the motion was rejected. The Labour Party spokesman said the number of unemployed in 1939 stood at almost the same figure as in January, 1936, although it had fallen in the interval, and added: "We are getting to a position now where we shall always have, in good times as well, a standing army of two million unemployed." He urged adoption of a policy by which workers would enter industry later and retire earlier, a shorter working week and working day, holidays with pay, and elimination of overtime. The Minister of Labour answered by stating that of the total of 2,039,000 unemployed in January, only 289,000 had been without work for more than twelve months, while 1,436,000 had been without work for less than six months, 1,187,000 for less than three months, and 906,000 for less than six weeks.

As war preparations progressed during the year, labor shortages were experienced in certain industries and regions of Great Britain. From 2,039,000 in January the registered unemployed declined to 1,256,000 in July, the lowest in ten years. Labor reserves in branches of industry, such as scientific and photographic instruments and apparatus, motor vehicles, cycles, and aircraft, had practically vanished in July. Pressure

STATISTICS OF EMPLOYMENT

Condensed from tables of *International Labour Review*, International Labor Office, Geneva, 1939, 1940.
Indexes of numbers employed (1929 = 100 except for France and Denmark, as indicated)

	Great Britain ¹	France ²	Germany ³	Canada ⁴	Australia ⁵	Denmark ⁶	Hungary ⁷	Italy ⁸	Union of South Africa ⁹	United States ¹⁰
1929	100.0		100.0	100.0	100.0		100.0	100.0	100.0	100.0
1930	95.8	100.0	93.3	95.3	93.0		94.3	94.2	99.3	93.9
1931	92.2	92.5	81.5	86.1	74.6	100.0	89.2	83.5	95.2	85.5
1932	91.4	80.9	71.1	73.5	74.1	91.6	82.0	72.4	88.7	76.8
1933	94.7	79.4	74.0	70.1	81.8	102.4	81.2	75.1	94.9	77.1
1934	99.2	76.9	85.5	80.7	89.7	113.5	86.9	77.8	108.1	83.9
1935	101.5	73.5	90.6	83.5	99.6	123.2	91.2	81.0	122.1	87.4
1936	106.7	74.1	97.2	87.1	109.4	128.9	97.7	81.0	134.9	92.4
1937	112.3	78.6	104.3	95.9	116.3	134.6	104.0	91.7	143.1	97.0
1938	111.0	81.2	110.9	93.9	124.3	132.0	110.6	95.5	148.1	90.8
1939:										
Jan.	109.8	82.6	110.8	89.5	118.4	124.0	111.7	85.3	145.0	90.3
Feb.	111.1	84.3	111.4	89.5	121.9	127.4	113.9	88.1	148.9	90.5
Mar.	112.8	84.6	112.9	88.2	123.3	133.8	113.3	100.2	150.5	91.1
Apr.	113.8	83.8	117.6	89.2	123.2	137.1	118.0		150.3	91.0
May	115.4	83.4	119.9	95.0	122.5	144.4	121.9		150.4	91.7
June	116.7	83.5	120.9	97.3	121.0	146.7			149.9	92.9
July		81.8	121.7	98.7	119.5				149.4	92.9
Aug.					120.2					93.5

¹ Compulsory unemployment insurance statistics for mines, industry, transportation, and commerce.

² Statistics of establishments in mining, industry, transportation, and commerce.

³ Sickness insurance statistics for agriculture, mines, industry, transportation, commerce, adminis. (Old territory)

⁴ Statistics of establishments in mines, industry, transportation, and commerce.

⁵ Statistics of establishments in industry.

⁶ Statistics of establishments in industry.

⁷ Sickness insurance statistics for mines, industry, transportation, and commerce.

⁸ Fascist Confederation of Industry statistics.

⁹ Statistics of establishments in mines, industry, and transportation

¹⁰ Not from *International Labour Review*. Index based on Bureau of Labor Statistics estimates of total nonagricultural employment.

was exerted to recruit masses of new workers for the engineering industry, but the Amalgamated Engineering Union and other labor organizations opposed all such dilution of labor until all the available engineering staff had full-time employment. The gains continued until the slump which set in when war was declared.

In Germany the state control of labor recruitment became more stringent in 1939. Forced labor appeared to be established as a permanent policy. A decree of Feb. 13, 1939, made more stringent the decree of 1938 which required all Germans to perform certain urgent State tasks or to undergo vocational training. The 1938 decree provided for recruitment for a definite period and regarded the recruited worker as being on leave from his previous workplace, but the 1939 decree provided that workers might be conscripted for indefinite periods and might leave their assigned occupation and workplace only with the permission of the State local labor office. It was also provided that other workers could leave or change their workplaces only with the permission of the Government.

France increased its governmental supervision over employment in 1939. The Minister of Labor took control over all employment exchanges, municipal and private included. To stabilize the labor supply in undertakings working for national defence, official decrees prohibited employers from hiring employees of other companies without permission from labor inspectors. Unemployment in France steadily declined from January until the declaration of war in September. The increase in unemployment in the fall is attributed in part to the mobilization which caused the closing of a large number of small shops when the proprietors were enlisted.

In Japan compulsory labor was introduced for the first time by an Imperial Order on July 8, 1939, to increase the output of munitions and to meet a growing scarcity of workers which resulted in some industries from the mobilization of armed forces.

Employment in the United States gained fairly consistently throughout 1939 after a considerable seasonal slump in January. The Bureau of Labor Statistics reported a decrease of approximately 880,000 workers in all nonagricultural employment from December, 1938, to January, 1939, and about 100 fewer persons were employed in January, 1939, than in January, 1938. Employment increased by approximately 45,000 workers from January to February, and 100,000 more persons were employed in February, 1939, than in February, 1938. In March and April the strike of approximately 280,000 workers in bituminous coal mining caused a drop in the level of employment, but in May, 1939, approximately 680,000 more workers were employed than in May, 1938. Employment showed a further gain of nearly 400,000 in June. There were approximately 1,110,000 more persons at work in August, 1939, than in August, 1938.

Increased attention was given in 1939 to employment problems of older workers. A special committee appointed by the Secretary of Labor made a report on the matter, finding that "while older workers are on the whole favored by seniority rules and general personnel policy, nevertheless when once they are displaced—whether by lay-off, technological unemployment, mergers, shut-downs, or other impersonal causes—they find real difficulty in securing reemployment." The

committee said its examination of factual data on productivity, accident sickness, group insurance, and pension plans, leads to the conclusion that there is little significant relationship between age and costs, and that the prejudice against hiring workers older than 40 rests largely on inadequate and erroneous impressions.

Wages. The Director of the International Labor Organization reported to the 25th annual session at Geneva in June that in every country, with the exception of Germany and recently of Japan, real hourly wages had been maintained at a figure above the 1929 level.

The effects of war upon wage levels and wage systems have not yet been reported. An important early development, however, was the reduction or elimination of overtime rates in several countries. In France, for example, the Hours of Work Decree of September 1 stipulated that hours in excess of 45 per week would be paid for at three-quarters of the normal hourly wages calculated at one-forty-fifth of the weekly wages previously paid for 40 hours of work.

Several different forces affected wage systems in the United States during 1939, although they have not yet brought substantial changes in the level of wages. The Fair Labor Standards Act was in force for its first full year, providing a minimum wage for workers in interstate commerce of 25 cents per hour until October 23, when the minimum was raised to 30 cents. The first minimum-wage order for an individual industry under the Act became effective in September. It established 40 cents an hour as the minimum wage for full-fashioned hosiery manufacture and 32.5 cents as the minimum in the seamless branch of the hosiery industry. State minimum wage laws for women raised wages in some industries. Increased collective bargaining, defining wages in agreements for the first time in several industries, was

GENERAL LEVEL OF WAGES IN U. S. INDUSTRY

Year	Bureau of Labor Statistics Series		National Industrial Conference Board Series	
	Hourly	Weekly	Hourly	Weekly
	¢	\$	¢	\$
1929			59.0	28.55
1930		25.34	58.9	28.84
1931		22.38	56.4	22.62
1932	45.8	17.86	49.8	17.05
1933	48.5	17.36	49.1	17.71
1934	54.1	18.93	58.1	20.12
1935	55.9	20.85	60.0	22.28
1936	56.4	22.60	61.6	24.47
1937	63.4	24.95	69.3	27.10
1938	63.9	22.70	71.4	24.49
1939	64.4	21.58	71.9*	26.87*

Index Numbers of Real Wages *

Year	Bureau of Labor Statistics Series		National Industrial Conference Board Series	
	Hourly	Weekly	Hourly	Weekly
1929		100	100	100
1930		95	103	94
1931		94	110	91
1932	100	84	108	77
1933	103	86	111	83
1934	118	92	124	89
1935	119	96	123	95
1936	118	101	123	101
1937	129	107	133	107
1938	131	100	140	99
1939	134*	108*	143*	106*

* Base: 1929=100, except for hourly earnings in B. L. S. Series, where 1932=100.

* Preliminary estimates

a stabilizing influence. General economic conditions also contributed to more stable wages.

Meanwhile, there was considerable public interest in systems of wage payments. Newspaper editorials and a variety of writers and speakers urged adoption of annual wages. A subcommittee of the Senate Finance Committee issued a report advocating profit-sharing.

Hours of Work. No important changes in the average number of hours worked per worker throughout the world appeared during 1939. The demand for labor, indicated by the rising level of employment, tended to lengthen the working days, but this tendency was offset to some extent by governmental restrictions. In the United States, for example, increased industrial production tended to increase the number of employees working the maximum hours, but the operation of the Fair Labor Standards Act tended to reduce the average by limiting the hours per week to 44 until October, when the maximum became 42.

International comparisons cannot be made because of the different statistical methods employed in various countries. Some countries compile their records on the basis of days, while others use weeks, fortnights, or months. The various periods cannot be transformed into a uniform period because of the varying number of days in different months, fluctuations in the labor turnover, holidays, etc. An indication of the changes in hours actually worked within each of several countries is presented in the accompanying table.

STATISTICS OF THE GENERAL LEVEL OF HOURS ACTUALLY WORKED IN INDUSTRY

Condensed from tables of the *International Labour Review*, International Labour Office, Geneva, 1939, 1940

	Germany (hours per day)	France (hours per wk.)	Italy (hours per mo.)	Sweden ¹ (hours per wk.)	Norway (hours per wk.)	United States (hours per wk.) B.L.S. N I C.B. ²
1929....	7.67	48.0	182			48.3
1930....	7.37	48.0	175			43.9
1931....	7.08	46.7	170			40.4
1932....	6.91	43.7	168			37.9
1933....	7.16	45.3	174	46.0		36.4
1934....	7.43	44.7	172	47.0		34.7
1935....	7.41	44.5	159	47.4		37.2
1936....	7.59	45.7	157	47.6	45.5	39.1
1937....	7.68	40.2	163	47.2	44.9	38.5
1938....	7.75	38.7	159	46.3	44.1	35.3
1939:						
Jan....	7.65	40.0	154			36.3
Feb....	7.65	40.1	153			36.9
Mar....	7.83	40.5	167	45.9	44.1	37.1
Apr....		40.7	153			36.4
May....		40.9				36.7
June....		41.4		45.2		37.2

¹ Mines included with industries.

² Monthly figures relate to first week of month.

Approximately half the recommendations and proposed draft conventions presented to the 25th conference of the International Labor Organization held in Geneva in June, 1939, related to the regulation or reduction of hours of work. A convention regulating hours of work in road transport was adopted. Other draft conventions designed to reduce hours of work in industry, commerce, and offices were considered, but formal action by the I.L.O. was delayed. The abnormal conditions which developed wartime economic systems in several countries were blamed for the failure to act on the matter. Typical was the statement of the French workers' delegate, Mr. Leon Jouhaux. "We are driven to suspend discussion of the 40-hour week," he said, "because a certain policy has developed in the world, be-

cause that policy has caused great anxiety in every nation, because it has led the nations to hasten the production of armaments to ensure their national safety and to defend their freedom."

In almost all belligerent countries and in neutral countries which have mobilized, wartime measures increased the power granted to the national administrative authorities to suspend or to modify regulations affecting hours of work and rest periods.

Germany created a National Defence Council in August with power to promulgate orders having the force of law during the emergency period. It immediately suspended old regulations imposing limitations on the hours of work and ruled that workers should not be entitled to extra pay for overtime, night, Sunday, or public holiday work.

Over the protest of organized labor, the French Government in 1939 issued decrees which allowed working hours to be increased from 40 to 60 per week in industries and undertakings working for national defence. The term "national defence" was defined to apply to mining, power, motor fuel, transport, state building undertakings, private concerns holding government contracts, and the great bulk of employers in France. The General Confederation of Labor resisted the measures, stressing fears that employers would abuse their privileges and aggravate the unemployment situation.

In Belgium the Eight Hour Day Act adopted in 1921 was kept in force generally, but in September it was announced that the Cabinet had approved a draft order restricting its application in undertakings executing urgent work for national defence.

The Minister of Transport in Great Britain ordered that maximum hours regulations should not apply to drivers of vehicles used for hauling defence supplies. Negotiations began in other industries for the adaptation of hours regulations to war conditions. Representatives of the British Federation of Master Printers, the Newspaper Society, and the Printing and Kindred Trades Federation reached an agreement effective in September creating a war emergency committee to deal with hours problems. The Confederation of Shipbuilding and Engineering Trade Unions and other labor organizations also began discussions of the possibility of revising hours in order to expedite the output of necessary war materials.

Union Movements. War put organized labor on the defensive throughout the world in 1939. As peacetime labor standards were shattered in some countries and seriously menaced in others, trade unions directed their efforts mainly toward protecting standards established in previous years.

The Seventy-first Annual Congress of British Trade Unions, held in September, dealt principally with the crisis in European affairs. The election continued the same General Council in office. Membership of unions affiliated with the Congress was reported to total 4,669,186, representing an increase of 208,000 over the previous year. The main resolutions and reports adopted stressed that organized labor in Great Britain directed efforts solely against the destroyers of freedom and enemies of peace and called for the reconstitution and regeneration of the League of Nations.

The General Confederation of Labor in France condemned the German-Soviet agreement and declared its sympathy with the French Govern-

ment's plans for industrial mobilization, but simultaneously it resisted several Government measures which it felt encroached on workers' freedom, principally the lengthening of the legal working hours. Several individual unions pursued plans intended to assist in increasing production. The Federation of Metal Workers, the Chemical Workers' Union, and the Regional Committee of Building Workers of the Paris Area offered to draw up lists of persons qualified for employment in different undertakings for submission to the employment exchange; they also suggested that where necessary the system of three shifts of eight hours each should be put into effect to enable work to continue throughout the 24 hours. The Federation of Electric Lighting Workers asked a guarantee that members mobilized shall receive throughout the war their salaries and allowances under the same conditions as civil servants and that workers mobilized shall be reinstated in their employment when the war ends. French workers, employers, and the Minister of Labor entered into an agreement in October providing for collaboration between employers' and workers' associations and the public authorities in regulating conditions in munition factories.

Trade Unions in the Netherlands asked and secured weekly meetings with employers in order to discuss difficulties arising out of the war. In a meeting on September 2 between the trade unions and the employers' federations, the latter announced they would make an appeal to all employers to reinstate after demobilization their workers who had been mobilized; to continue to pay to the heads of families the usual wages, after deduction of the allowances paid by the military authorities; to delay dismissal of their workers as long as possible and when such dismissal becomes inevitable to consult the parties concerned before taking action.

Union movements in the United States were somewhat restricted by state legislation in 1939. A law was enacted in Florida requiring the registration of labor organizations. Several states adopted mediation and arbitration statutes providing that notice must be given before a strike or lockout may legally take place. Michigan's mediation law forbids participation in sit-down strikes, intimidation of other employees for the purpose of inducing them to join a union or of preventing them from working. Minnesota's new labor relations act has similar provisions and also forbids picketing where there is no strike or where the majority of pickets are not employees of the concern picketed. Wisconsin and Pennsylvania amended their anti-injunction laws to facilitate the granting of injunctions in labor disputes.

Probably the most significant development affecting union activities in 1939 was the application of the antitrust laws to labor organizations. In the midst of a Department of Justice inquiry into monopolistic practices in the building trades, Asst. Atty. Gen. Thurman Arnold released a statement listing types of unreasonable restraint "which in our opinion are unquestionable violations of the Sherman Act." The practices against which the Department of Justice has proceeded, the statement said, are unreasonable restraints designed to destroy an established and legitimate system of collective bargaining, to enforce illegally fixed prices, to enforce systems of graft and extortion, to compel the hiring of useless and unnecessary labor, and to prevent the use of

cheaper material, improved equipment, or more efficient methods. The statement explained that the principle applicable to unions is the same as that applicable to other groups specially protected by law. Mr. Arnold made it clear that the Department of Justice would prosecute only such boycotts, strikes, or coercion by labor unions as have no reasonable connection with wages, hours, health, safety, the speed-up system, or the establishment and maintenance of the right of collective bargaining.

Despite these complications, unionism and collective bargaining were extended to more workers in 1939 than in any previous year, for the American Federation of Labor and the Congress of Industrial Organizations both claimed membership gains.

Activities of the two federations in 1939 increased the prevalence of dual unionism. The Building Trades Department of the A. F. of L. formerly had the field to itself, but on August 1 the C.I.O. established the United Construction Workers Organizing Committee. Following the split within the United Automobile Workers, the faction led by R. J. Thomas continued its affiliation with the C.I.O., while the faction led by Homer Martin received an A. F. of L. charter. A faction of the C.I.O.'s United Textile Workers also withdrew and received an A. F. of L. charter. Meanwhile, within the C.I.O. the Textile Workers Organizing Committee and the United Textile Workers merged into a new organization known as the Textile Workers Union of America.

The C.I.O. also merged the National Leather Workers Association with the Fur Workers International Union to form the Fur and Leather Workers International Union and consolidated three units of the United Fishermen's Union of the Pacific to become the International Union of Fishermen and Allied Workers of America.

The A. F. of L. also gave a charter to the United Cement, Lime and Gypsum Workers' International Union and extended the jurisdiction of the International Molders Union of North America by ordering the International Brotherhood of Foundry Employees to merge with the Molders.

See the articles on AMERICAN FEDERATION OF LABOR and CONGRESS OF INDUSTRIAL ORGANIZATIONS for statements by William L. Green and John L. Lewis on the respective positions of the two organizations during 1939.

Collective Bargaining. Industrial mobilization for war offered severe threats to collective bargaining in several countries during 1939, but no serious setbacks were recorded. To the contrary, in those countries not subject to dictatorship, there appeared to be considerable willingness to submit wartime labor problems to negotiation. The first serious disputes arose from demands by seamen for war risk bonuses, and such disputes were settled by agreements in Great Britain, Belgium, the United States, Denmark, the Netherlands, Norway, Sweden, Finland, and Italy.

Probably the most conspicuous example of successful collective bargaining under the stress of war appeared in France, where employers and workers in October reached an agreement providing for collaboration between employers' and workers' associations and the public authorities in regulating conditions in munition factories.

In the United States the prevalence of collective bargaining increased as a natural consequence

of further unionization. The National Labor Relations Board states in its Fourth Annual Report:

The development has been really spectacular in the mass-production industries, where before 1937 there were almost no agreements. Prior to 1937 there were few agreements in iron and steel; in that year more than 350 were reported. By 1938 the number had increased to 500; and three-fourths of the basic iron, steel, and tin-producing industry and varying proportions of allied metal fabricating and processing were covered by agreement. The number continues to grow. In contrast with the small number (roughly 100) of rubber workers covered by agreement in 1932, there are now more than 40,000; more than 80 per cent of this coverage has been effected since the Supreme Court decisions validating the National Labor Relations Act. Other examples of recent agreements in mass production include flat glass (more than 21,000 workers), aluminum (6 plants employing 17,000 workers), automobile (more than 500 agreements in 1938), electrical equipment (more than 400 agreements covering companies like Philco, General Electric, Radio Corporation of America), and rayon yarn (American Viscose employing 20,000). These examples provide only meager illustration of a growth in written trade agreements that is unprecedented.

Refinements in collective agreements also developed in 1939. The Research Division of the National Industrial Conference Board analyzed in detail 90 representative contracts in the middle of 1937 and 114 representative contracts in the middle of 1939. Comparisons of these studies led the Conference Board to the following conclusions:

In general, recent union agreements seem to indicate a more serious acceptance of collective bargaining than former ones. The character and wording of the various provisions give the impression of an attempt to construct practical and workable agreements to cover situations that arise in day-to-day plant operation rather than of contracts entered into under duress and couched in such vague terms as to make misunderstanding inevitable and amicable administration difficult.

Either as a result of this acceptance of collective bargaining or because both parties recognize the drawbacks of too great rigidity, there is a tendency to make these instruments more flexible, allowing a greater leeway in their administration and leaving more matters subject to joint negotiation. Since such a development can only be possible if each of the parties respects and has confidence in the other, the implication is that in some companies, at least, collective bargaining has progressed beyond the preliminary stage of instinctive combativeness. Efforts toward genuine co-operation appear in such provisions as the following: "To promote the welfare of the company, the union offers to assist the company in the enforcement of the reasonable discipline now being practiced by the company and otherwise to promote the success of the company in every reasonable manner." If this is becoming the spirit actuating union-management relations, then a new stage in collective bargaining is in process of development in the United States.

More specifically, the Conference Board found that the newer agreements showed a considerably greater prevalence of closed-shop provisions than older agreements, more prohibitions against time studies and incentive systems, more complete seniority rules, and improvements in procedures for handling grievances. Another important finding was that whereas a majority of the 1937 agreements ran for definite periods, usually a year, the prevailing practice in 1939 was to make the duration of the agreements indefinite, with provisions for modification upon due notice by either party.

Closed-shop proposals were perhaps the most highly controversial subject in negotiations during the year, but the Bureau of Labor Statistics confirmed the Conference Board's finding regarding the prevalence of closed shops. It reported in October that more than half of the 7000 current union agreements on file contained provisions requiring that all employees be members of the union. It is estimated that about three million organized workers in the United States are working under closed-shop conditions.

Collective bargaining with employers' associations or bargaining for an entire industry or trade within a geographic area appeared to become more prevalent in 1939. The Industrial Relations Division of the Bureau of Labor Statistics reported in August that about 3,500,000 workers were covered by agreements negotiated with national, regional, or city-wide employers' associations.

Probably the most important case of industry-wide negotiation was in the bituminous coal industry, where 150 representatives of 21 associations met with 150 representatives of the United Mine Workers. Six of the owners' associations refused to accept the agreement when it finally was reached and withdrew, but later signed agreements substantially the same as the ones signed by the majority of the associations. Most of the trucking firms in Southern New England designated a committee with full authority to negotiate for the entire group when the Teamsters' Union called its members out on strike. In the Middle West an Operators Area Committee representing more than a dozen interstate trucking lines negotiated a renewal of an old agreement, which now will run until November, 1941. In the maritime industry, the needle trades, and several other industries, collective bargaining continued on a coast-wide, city-wide, or trade-wide basis. In August the Building Trades Department of the A. F. of L. made its first national agreement with the Building Trades Employers Association; this agreement related only to the handling of jurisdictional disputes and did not deal with conditions of employment, but it is significant because of its country-wide scope.

Strikes. Few strikes of importance occurred in Europe or Great Britain in 1939. National appeals in several countries for co-operation from organized labor in increasing industrial output apparently were effective. Great Britain's monthly reports of strike statistics showed decreases per month of from 10 to 25 per cent in the frequency and intensity of strikes. Strike statistics from European countries are not available, but no outstanding stoppages of work were reported. In France a decree empowered the Minister of Labor to introduce a system of conciliation and arbitration applicable throughout the war.

Sweden successfully completed its first year under a "General Agreement" by which the Employers' Federation and the Confederation of Trade Unions bound themselves not to resort to strikes or lockouts without having first tried methods of peaceful negotiation in accordance with rules stipulated in the agreement. The pact was signed on Dec. 20, 1938, as the outcome of negotiations carried on since 1936.

In the United States strikes were less frequent in 1939 than in 1938, but the prolonged mining and automobile strikes brought an increase in the man-days lost. The so-called "sit-down" strikes which became common about four years ago practically vanished from American industry after the Supreme Court in February, 1939, held them to be illegal. "Quickies" or "job-action" strikes also became less frequent, as adjustment machinery created by collective bargaining agreements provided procedures for the orderly handling of grievances.

Coal mining and automobile manufacturing were the two most turbulent industries in 1939.

Bituminous Coal Strike. The contract between the United Mine Workers of America

(C.I.O.) and operators of bituminous coal mines in the Appalachian fields expired on March 31. Negotiations had been carried on during March, the U.M.W. asking a raise of 50 cents per day, a 30-hour week, a guarantee of 200 working days per year, two weeks vacation with pay, and the closed shop. Operators offered a contract similar to the old one with a 50 cents per day reduction in pay and continuing the 35-hour week. The strike started April 3, with about 340,000 men quitting work. Early in May other bituminous miners outside the Appalachian region struck, bringing the total to about 420,000.

The most difficult issue in dispute was the union's demand for the closed shop. Although in effect the U.M.W. had the closed shop by the check-off system for many years, it was no serious problem because no other organization in the field was strong enough to challenge the U.M.W.'s right to represent the miners. In recent years, however, the Progressive Mine Workers of America (A. F. of L.) engaged in vigorous organizational campaigns, challenging the U.M.W. priority.

Agreement on questions of wages and hours was reached early in the negotiations, both sides agreeing to continue the rates and schedules of the agreement which expired on March 31. The operators resisted the demand for the closed shop but offered to make the U.M.W. the sole bargaining agency and proposed to check off dues for union members. The U.M.W. held out for the closed shop or alternatively the elimination of the penalty clause in the old agreement against unauthorized strikes. The union claimed that failing to obtain a closed-shop agreement, they should have the right to strike or the Progressive Mine Workers might, by obtaining as members the majority of workers in any one mine, go before the National Labor Relations Board and get a certification.

The dispute was finally settled on May 13, the operators agreeing to a union shop arrangement under which all new employees would be required to join the U.M.W. Operators in Harlan County, Kentucky, held out against union demands longer than the other employers and thereby threatened the entire arrangement for stabilizing labor relations in the bituminous coal industry, but they yielded in a few weeks.

Chrysler Strike. Strife in the automobile industry began in February when more than 10,000 workers in the Plymouth plant of the Chrysler Corporation at Detroit were idle for about two days as the result of a dispute between the two factions of the United Automobile Workers. The strike was called off when a petition was filed with the National Labor Relations Board for an election to determine the representatives of the employees.

Unrest continued throughout the year, culminating in the dispute between the Chrysler Corporation and the United Automobile Workers (C.I.O.), lasting 54 days and involving a total of more than 58,000 Chrysler employees. Company officials called it a "slow-down strike"; union leaders called it a lockout. More than 100 men were dismissed at the Dodge plant, a key unit of Chrysler operations, on October 6. The U.A.W. charged that the men were unable to keep pace with what it termed a "speed-up" of production standards, while the company said those discharged had "refused to do their work and flouted discipline." For several days Dodge work-

ers reported for work daily but were sent home, as the management said "slow-downs" made continued operation impossible. In a few weeks the union formally called a strike and set up picket lines.

Constant negotiation and early mediation by the United States Department of Labor and the Michigan State Mediation Board occurred, but no basis for settlement appeared until the end of November. The agreement finally signed provided a blanket increase of three cents an hour with a higher rise for some classifications, rejection of the union shop demand, creation of a joint appeals board for handling grievances, company control of production standards, and a union pledge not to permit its men to participate in sit-down, stay-in or slow-down strikes.

Other Strikes. Among other labor disputes in 1939, many of the most severe strikes resulted in collective bargaining agreements promising a reasonable degree of industrial peace. The strike of 8000 truck drivers against trucking firms in Rhode Island, Connecticut, and part of Massachusetts, called by the International Brotherhood of Teamsters, Chauffeurs, Stablemen & Helpers on March 19, ended in a contract which will remain in effect until April, 1943. Wage rates are stipulated with increases varying in amount for most of the men during each of the successive years the contract is in force. It is provided that the rates in 1942 shall be uniform in all the areas covered by the contract. To administer the provisions and adopt such measures and regulations as will eliminate unfair practices from the industry, the agreement created a Fair Trade Practice Board of the Trucking Industry of New England.

Records of the major issues in dispute, the relationship of strikes to industrial production, and the frequency and intensity of strikes are presented in the accompanying statistical tables.

TREND OF STRIKES IN THE UNITED STATES*

Year or month	No. of strikes beginning in year or month	Workers involved in strikes beginning in year or month	Man-days idle during year or month
1933	1,695	1,168,272	16,872,128
1934	1,856	1,466,695	19,591,949
1935	2,014	1,117,213	15,456,337
1936	2,172	788,648	13,901,956
1937	4,740	1,860,621	28,424,273
1938	2,772	688,376	9,148,273
1939	2,500	1,200,000	18,000,000
1939:			
Jan.	198	50,941	517,117
Feb.	194	67,997	554,987
Mar.	206	43,221	619,987
Apr.	271	395,505	4,899,830
May	249	94,632	3,556,631
June	226	61,750	963,115
July	209	172,023	1,162,930
Aug.	229	75,377	1,070,487
Sept.	166	35,137	878,919
Oct.	174	104,432	1,481,806
Nov.	155	41,384	1,655,308
Dec.	105	13,000	345,000

* Condensed from tables of Bureau of Labor Statistics, U.S. Department of Labor. All figures for 1939 are preliminary.

Health, Safety, and Workmen's Compensation. No outstanding events occurred in relation to industrial health and safety during 1939, but hundreds of minor improvements in conditions were made throughout the world.

A system was inaugurated in France for the medical inspection of all workers under 18 years of age in commercial and industrial establishments. France also established an Industrial

MAJOR ISSUES INVOLVED IN STRIKES DURING 1939*
(Figures represent per cent of total strikes beginning in month.)

Month	Wages and hours	Recognition of union	Recognition plus wages and/or hours	Closed or union shop	Discrimination	Jurisdiction and rival unions or factions	Other issues or issues not reported
Jan.	25.2	16.4	24.6	7.4	3.1	6.2	17.1
Feb.	19.7	16.6	16.8	11.0	4.6	6.9	24.4
Mar.	22.3	16.8	20.1	13.4	6.1	5.6	15.7
Apr.	33.8	7.8	18.2	13.7	2.9	7.8	15.8
May	32.9	11.1	18.4	14.0	5.8	4.8	13.0
June	32.0	4.1	17.6	12.2	3.1	6.7	24.3
July	27.7	8.5	18.1	17.0	5.3	9.1	14.3
Aug.	25.8	11.3	24.4	14.9	5.0	5.0	13.6
Sept.	32.9	9.5	19.6	13.3	5.7	3.2	15.8
Oct.	31.2	5.3	24.8	12.2	7.1	4.2	15.2
Nov.	32.3	10.3	18.0	12.3	9.0	2.0	16.1
Dec.	22.7	18.2	25.0	8.0	1.1	6.9	18.1

* Condensed from tables of *Monthly Labor Review*, U. S. Department of Labor, 1939, 1940.

Safety Commission to prepare draft administrative regulations and to advise the Minister of Labor on any question relating to industrial safety.

Italy set up a national center for the training of factory doctors and instituted a system of bi-monthly medical examination of workers employed in glass works.

In the United States, Arkansas adopted a workmen's compensation law covering occupational diseases as well as accidents, leaving Mississippi as the only state without compensation legislation. Several other state legislatures in 1939 enacted new occupational disease laws or extended the scope of old laws.

An experiment was started in Wisconsin with pre-employment medical examinations in an effort to find a way to check the indiscriminate screening out of employees and applicants for employment on the basis of physical considerations. The plan is to provide examinations by a physician designated by the employer. Neither the employer nor the worker is to receive a copy of the physician's report, but both are advised of the findings. If a worker is dismissed or rejected on the basis of such findings, he may have another examination by a physician appointed by the state industrial commission, whose findings are to be conclusive.

The Bureau of Labor Statistics in October, 1939, published its annual statistics of industrial injuries, showing that accidents in industry during 1938 resulted in the death of 16,400 persons, caused permanent injuries to 98,900 persons, and temporarily disabled 1,260,300. The total of all types of injuries was 1,375,600. The figures indicated a substantial decrease from those of the preceding year, for which 19,600 fatalities, 126,700 permanent and 1,691,700 temporary injuries were estimated.

Women in Industry. The use of women in almost every branch of economic activity increased during the year, essentially because of dwindling labor reserves which developed in some countries owing to the rearmament programs.

In Switzerland an order made women from 16 to 60 years subject to compulsory labor. Germany included women in its compulsory labor system at first but later modified its regulations to provide numerous exceptions. In the Soviet Union an organized campaign was started to increase the number of women wage earners; an appeal was made to women to take up mining work, and measures were undertaken for the training of more than 100,000 women tractor drivers. In France the Minister of Labor issued an appeal

for women to work as riveters, screw cutters, drillers, and metal pressers, on jobs left vacant by male workers who were mobilized.

Without objection from the Confederation of Trade Unions, the Swedish government moved to change its regulations to allow women to do night work in munition factories. The Swedish Riksdag in May adopted a law which prohibits the dismissal of women from work in any industry on grounds of betrothal, marriage, pregnancy, or confinement if they have been employed for two years. The Act also prohibits any reduction of wages on the same grounds except where a woman is called upon to suspend her activity on account of the nature of the work.

In Great Britain a number of women's organizations formed voluntarily during the last war to encourage women to replace men in various fields were revived in 1939. Among these are the Women's Land Army, to provide training for women in agriculture; the Women's Engineering Society, to train women for munition work, and the Women's Employment Federation, to enroll women for various occupations. The National Joint Industrial Council for the Road Passenger Transport Industry and the London Passenger Transport Board considered the possible substitution of female for male labor but found such substitution unnecessary. Furthermore, the Transport, and General Workers' Union made it clear that it could consent to the employment of women only when suitable men were not available.

Child Labor. The outbreak of war brought increased use of young persons and children in industries of mobilized nations, but otherwise no important changes in child labor conditions abroad occurred during 1939. In the United States the first year of Federal restrictions on child labor under the Fair Labor Standards Act was completed in October. The Act, which went into effect on Oct. 24, 1938, prohibits shipment in interstate commerce of goods made in establishments in which children under 16 are employed. In addition, the Children's Bureau is authorized to declare occupations especially hazardous for the employment of minors between the ages of 16 and 18 and to prohibit their employment. The Children's Bureau is also authorized to exempt children 14 to 16 years from provisions of the Act for work outside manufacturing or mining occupations which does not interfere with their schooling, health, or well-being. Already approximately 50,000 children under 16 years have been removed from industry under the Act.

West Virginia and Massachusetts in 1939 established 16 years as the minimum age for work during school hours, and eight other state legislatures considered bills to the same effect. California prohibited the issuance of home workers' certificates to persons under 16 years of age.

Meanwhile, no further action was taken on the child-labor amendment to the United States Constitution, approved by Congressional resolution in 1924. Before the amendment becomes law it must be ratified by the legislatures of eight states in addition to the 28 which had ratified it by 1937.

The subjects of LABOR LEGISLATION and OLD-AGE PENSIONS are discussed in separate articles in this volume. See also CHILDREN'S BUREAU; CONCILIATION SERVICE, U.S.; EMPLOYMENT SERVICE, U.S.; FEDERAL SECURITY AGENCY; NATIONAL LABOR RELATIONS BOARD; SOCIAL SECURITY BOARD; WAGE AND HOUR DIVISION; WOMEN'S

BUREAU. For the Maritime Labor Board, see **SHIPPING.**

WILLIAM M. LEISERSON.

LABOR LEGISLATION. The far-reaching changes made in the Social Security Act by Congress stand out as the most important labor legislation of 1939. This one enactment directly affects more than 40 million workers and their families, as well as other millions including the needy aged, the crippled, the blind, and underprivileged mothers and children.

In the 44 state legislatures which met in regular session the most notable accomplishments were the adoption of workmen's compensation in Arkansas; abolition of forced worker contributions under unemployment compensation in Massachusetts; adoption of occupational disease compensation in Idaho and Maryland, and of all-inclusive in place of limited-list coverage of occupational diseases in Ohio; adoption of a minimum wage law for women in Alaska, and extension of the Connecticut law to cover men; and adoption of a vocational rehabilitation law in Delaware.

The movement for progressive laws, however, suffered severe reversals in several states, particularly in Pennsylvania but even in such customarily progressive states as Wisconsin.

Social Security. Sweeping revisions of the old age insurance provisions of the Federal Social Security Act not only advance to January, 1940, the date on which benefits become payable, but also provide benefits for dependents and survivors of insured individuals. Coverage has been extended to include maritime employments and national banks. Eligibility requirements are reduced and benefits raised for workers now at or near the retirement age which is 65; but for younger workers, especially those without wives or other dependents, these provisions are less liberal than formerly. Supplementary benefits are provided for wives and widows over 65 years of age, and dependent children under 18 years of age, of fully insured persons. Moreover, if an insured worker dies before reaching age 65, benefits will be paid to his children under 18 years of age and to his widow while caring for such minor children, or to dependent parents. Monthly benefits will vary from \$10 to \$85, depending on average monthly wages and length of covered employment. Taxes on employers and workers for old age insurance will remain at 1 per cent each until 1943. Provision is made for a continuing study and reports on actuarial needs of the system.

Other amendments to the Social Security Act substantially increase authorized appropriations for vocational rehabilitation, maternal and child health, crippled children, and public health services; and provide for reimbursement of one-half of state pensions for the aged and the blind up to \$40 instead of \$30 a month. Puerto Rico is now covered by the vocational rehabilitation, maternal and child welfare, and public health provisions. Authorized Federal appropriations for state unemployment compensation administration are increased from 49 million to 80 million dollars annually. Of outstanding significance also are the new requirements of state personnel selection through approved merit systems as a condition of Federal aid under the Act.

Unemployment Compensation. Among amendments to state unemployment compensation laws, the abolition of worker contributions

in Massachusetts leaves only six states which still retain this requirement. Massachusetts and North Carolina adopted experience rating of employer contributions, but Alabama, Montana, and Washington substituted provision for study of the subject in place of former experience rating provisions. Of the eleven states without experience rating, all but Pennsylvania now provide for study of this device. Among other important changes are: Shortening of the "base period" to one year in 29 states; substitution of highest quarterly earnings in place of full-time weekly wages in computing benefits in a score of states; provision of benefit amounts rounded to 50-cent or dollar intervals in most states; fixing a \$5 minimum benefit in half of the states; adoption of a uniform duration for benefit payments in nine states; increase in earnings requirement for eligibility in 15 states; and requirement of only one two-week waiting period in a benefit year in a score of states.

Old-Age Pension. Old-age pension or assistance laws were amended in many states. Citizenship requirements were repealed in Oregon, South Dakota, Oklahoma, and West Virginia, but were added in Florida and Maine. The age requirement was lowered from 70 to 65 in Missouri. West Virginia reduced and Kansas raised residence requirements. Florida repealed provision for relatives' responsibility. The Connecticut maximum pension was raised from \$7 to \$9 weekly; and Iowa and Maryland now permit limited additional aid where the recipient's physical condition or need for medical care warrants. Vermont and Washington, however, further restricted maximum pensions by providing that income and resources, respectively, must be taken into account. Requirement of a lien on the recipient's property was repealed in Florida, Kansas, Louisiana, and Oregon, but was added by Minnesota and Nebraska. Florida also repealed provision for recovery from the pensioner's estate.

Labor Relations. Although a drive in Congress to amend the National Labor Relations Act was blocked, similar movements to restrict union activities succeeded in four states—Michigan, Minnesota, Pennsylvania, and Wisconsin.

While asserting labor's right to organize and bargain collectively, all four of these new laws include restrictions on the nature of the bargaining unit, the conduct of strikes including picketing, and the maintenance of the union shop. Moreover, they do not fully outlaw employer interference with employee organizations. The Michigan and Minnesota acts require that state mediation agencies be notified five and ten days, respectively, before a strike or lockout begins, and in industries affected with a public interest there must be a 30-day investigation by a commission before a strike may occur legally. In these two states, no state board is provided to enforce collective bargaining rights, this being left to the courts which may issue injunctions.

In Connecticut and New Mexico, laws were enacted this year limiting the use of injunctions in labor disputes; and in California and Vermont, labor departments were authorized to mediate and promote voluntary arbitration of labor disputes.

Workmen's Compensation. Adoption of a workmen's compensation law in Arkansas this year leaves only Mississippi without such a law. The Arkansas law, however, remains inoperative pending a referendum.

The new occupational disease compensation

provisions in Idaho and Maryland and also in Arkansas are of the limited-list type and also place restrictions on benefits to silicosis victims. Ohio, on the other hand, after experience with a limited-list law extended compensation to cover all occupational diseases and at the same time repealed the restrictive silicosis provision copied from the New York law in 1937.

Montana this year made her compensation law compulsory instead of elective; and California and Pennsylvania added to the penalties for failure of employers to insure their risk. Compensation benefits were liberalized in a number of states, notably California, Connecticut, Illinois, Kansas, New Hampshire, and Wyoming. California broadened her law to cover household domestic employees working 52 or more hours a week. Nevada and Oregon extended the employers' right to merit rating under the exclusive fund laws of these states.

The Pennsylvania legislature wiped out most of the advances made in that state in 1937 and 1938, going so far as to restore some of the common law defenses to employers who elect not to be covered by the compensation law. Benefit limits, both cash and medical, were lowered in amount and duration, although the percentage of wages paid was raised from 65 to 66%. Special provisions for second injuries were abolished, as was the assessment of administrative costs on insurance carriers.

Railway workers not yet protected by workmen's compensation are under the Federal Employers' Liability Act which was amended in 1939 to cover any employee of a common carrier any part of whose duties are in furtherance of interstate or foreign commerce, or which directly or closely and substantially affect such commerce. Senator Wagner reintroduced his bill in Congress this year to provide for interstate workmen's compensation.

Delaware, the final state in this matter, adopted for the first time a law providing vocational rehabilitation of cripples; and Arizona provided special compensation benefits out of the rehabilitation fund in certain cases where special care is needed.

Wages and Hours. Extension of minimum wage regulation to cover men in Connecticut, and adoption of a minimum wage law for women (\$18 flat rate) in Alaska, and for women and minors in the fish-canning industry in Maine, were the leading developments in wage regulation this year. Surprisingly, no state adopted a wage-hour law on the Federal model, but co-operation in enforcement of the Federal act was authorized in California, Montana, New Hampshire, North Carolina, Oregon, South Carolina, Vermont, and Hawaii.

Connecticut made all minimum wage orders immediately mandatory; New York raised the penalty for minimum wage violations; and Nevada fixed minimum rates for learners. In Illinois, a prevailing wage law for public works was enacted.

Noteworthy among new hour laws are those of Montana, providing an 8-hour day, 48-hour week for restaurant workers; and of California, Massachusetts, and Utah, extending coverage of women's hour limits. Backward steps were taken in New Mexico which now permits a 7-day week for women; and in Pennsylvania which relaxed its women's night-work law. While Massachusetts broadened the coverage of her one-day-of-

rest-in-seven law, New Hampshire added to the exemptions from her law.

Child Labor. Legal protection for working children was extended this year in Hawaii where a 16-year age minimum for factory work was established, together with a 40-hour, 6-day week and prohibition of nightwork. Alaska fixed a 16-year age minimum for girls in factories and mercantile establishments. West Virginia reduced children's weekly hours from 48 to 40 and raised to 18 the minimum age for employment in an extended list of hazardous occupations. California and Massachusetts excluded children under age 16 from industrial homework. While Maryland strengthened her provision of extra-compensation for minors injured while illegally employed, reactionary Pennsylvania reduced the amount from double compensation to an additional 10 per cent. Modern apprenticeship laws were adopted in California, Minnesota, Nevada, and North Carolina, making twelve states with such laws. No new states ratified the Child Labor Amendment this year.

Health and Safety. Provision for research in occupational disease control by health departments was made in Arkansas, Idaho, Maryland, Minnesota, Montana, and Rhode Island. Illinois adopted a safety code for work in compressed air, and Arkansas extended coverage of mine safety laws to all mines. Montana strengthened her law on mine ventilation, but Indiana exempted from ventilation provisions mines employing fewer than ten workers.

Miscellaneous. By definition, California extended her fee-charging employment agency law to include labor contractors and provided for their licensing; but Missouri weakened her employment agency law by removing the one-dollar limit on registration fees. California, West Virginia, and Puerto Rico adopted industrial homework laws of the modern restrictive type. Wage-payment laws were enacted or strengthened in a dozen states. Utah made it a misdemeanor for an employer to charge a worker for pre-employment physical examination.

Administration. Unified labor law administration was achieved this year in Alabama which combined in a Department of Industrial Relations the functions of four independent agencies including mine inspection. Vermont created a new Department of Industrial Relations replacing the office of Commissioner of Industries; and Hawaii, whose population is little larger than Vermont's, set up a Department of Labor and Industry headed by a five-member board and including also a three-member appeal board and three five-member accident boards.

Unemployment compensation administration was separated from existing labor departments in Colorado, Minnesota, and Rhode Island, and from the Social Security Department in Washington. Workmen's compensation administration was made independent of the newly reorganized state labor department in Kansas. A Labor Mediation Board in Michigan and an Employment Relations Board in Wisconsin were created as independent agencies. Single-headed authority was substituted for commission administration of unemployment compensation in Alabama, Colorado, Massachusetts, Minnesota, Ohio, and South Dakota; and of workmen's compensation in Kansas. The new Arkansas workmen's compensation law provides for an independent three-member commission. A Federal Social Security Agency was created,

combining under one Administrator the Social Security Board, the U.S. Employment Service, the Public Health Service, the Office of Education with its vocational rehabilitation service, the Civilian Conservation Corps, and the National Youth Administration.

Puerto Rico created a Board of Industrial Safety with administrative rule-making power in her labor department. Rule-making power was also delegated to the new Hawaii and Alabama labor departments, and to industrial hygiene bureaus in Idaho, Maryland, and Montana.

Investigations. The numerous special investigations authorized by legislatures this year deal with the following subjects: occupational diseases and their compensation in New Hampshire, Oregon, and Utah; workmen's compensation in Michigan, Oregon, and Texas; wage-hour legislation in Maine, Massachusetts, and North Carolina; woman and child labor in hospitals in Massachusetts; labor relations in New York; and the National Labor Relations Board in Congress. Rhode Island created a representative seven-member committee to study and to report from time to time on labor legislation.

JOHN B. ANDREWS.

LABOR LEGISLATION, AMERICAN ASSOCIATION FOR. Founded in 1906, this membership organization of socially minded economists, lawyers, journalists, labor leaders, and employers has worked along scientific lines, consistently attacking needless industrial evils from the general welfare viewpoint. It continued its work as the American arm of the International Association for Social Progress formed in 1925 by the fusion of the three international organizations for labor legislation, unemployment, and social insurance. Progress of the Association was recorded in its substantial quarterly, the *American Labor Legislation Review*. A cumulative index to the first 20 volumes of this *Review* was published in 1931.

The Association from the beginning has given special attention to social insurance legislation, and to laws for the prevention of industrial and mine accidents and occupational diseases, the mitigation of the evil effects of unemployment through long-range planning of public works, the regulation of fee-charging employment agencies, and the development of public employment offices, and for the provision of one day of rest in seven. It places special stress upon effective administration of the laws and has published a number of substantial reports of its surveys.

The Association's 33rd Annual Meeting was held in Philadelphia, December 27-29, several sessions being held jointly with the American Economic Association, the American Statistical Association, and the American Sociological Society.

The president in 1939 was Joseph P. Chamberlain; the treasurer, Eustace Seligman; the secretary, John B. Andrews. Headquarters are at 131 East 23rd Street, New York City. See **LABOR LEGISLATION**.

LABOR UNIONS. See **CALIFORNIA**; **AMERICAN FEDERATION OF LABOR**; **CONGRESS OF INDUSTRIAL ORGANIZATIONS**; **LABOR CONDITIONS**.

LABRADOR. A dependency of Newfoundland, occupying the most easterly part of British North America. Area, 118,400 square miles; population (1935), 4716. Chief settlement, Battle Harbor. During 1938, two large iron-ore deposits were discovered. Crop failures in 1939 caused a

food shortage and the declaration of war in Europe, in September, foreshadowed the possible commandeering of the fishing fleet and the disruption of the market for fish. See **NEWFOUNDLAND**.

LABUAN. See **STRAITS SETTLEMENTS**.

LACROSSE. See **SPORTS**.

LAEMMLE, lēm'lē, CARL. An American motion picture executive, died in Hollywood, Calif., Sept. 24, 1939. Born in Laupheim, Germany, Jan. 17, 1867, he came to the United States when 17, and became a citizen in 1889. After clerking in New York and in Chicago, in 1894 he entered the employ of the Continental Clothing House, Oshkosh, Wis. He left this organization in 1906 and went to Chicago where he intended to start a five-and-ten cent store. While there he saw his first motion picture and became so interested that he decided to invest his savings of about \$3000 in that industry, then in its infancy. His first theater was a small store which he painted white and named the "White Front." Successful, he established other nickelodeons throughout the City, but difficulty in getting pictures to show led him to establish the Laemmle Film Service, a wholesale motion-picture exchange business.

Again successful, he established the Imp Film Co. in 1909, and in a small studio in New York produced his first picture—*Hiawatha*, released Oct. 25, 1909. Among the original members of this company were Mary Pickford, Jack Pickford, Tom Ince, and Owen Moore. Because of the monopoly of the industry by the Motion Picture Patents Co., independent dealers were forced to deal with it, and in 1909 Mr. Laemmle entered into litigation with this organization. It was not until 1912 that he was successful in breaking the monopoly. In that year he formed, with several others, the Universal Film Manufacturing Co., which in the same year produced the first "feature" picture in five reels—*Traffic in Souls*. In 1920 Mr. Laemmle gained control of the company and reorganized it as Universal Pictures Corporation. In 1936 he retired as president of the company and sold his interests for the reputed sum of \$5,500,000.

Universal Pictures was the owner of Universal City, California. They produced one of the first million-dollar pictures, *The Hunchback of Notre Dame* featuring Lon Chaney, and had under contract such stars as Rudolph Valentino, Wallace Reid, Pearl White, Lon Chaney, and Ben Turpin. A biography of Mr. Laemmle by John Drinkwater was published in 1931.

LAFAYETTE COLLEGE. An institution for the higher education of men in Easton, Pa., founded in 1826. The registration in the autumn of 1939 was 963. The faculty numbered 99. The productive funds amounted to \$3,933,580 in 1939, and the income was \$160,774. The number of volumes in the library was 100,000. President, William Mather Lewis, A.M., LL.D., Litt.D., L.H.D.

LA GUARDIA FIELD, N. Y. See **AERONAUTICS**.

LAMPS. See **ELECTRICAL ILLUMINATION**; **GLASS**.

LANDS, PUBLIC. See **GENERAL LAND OFFICE**.

LAND TENURE AND USE. See **SOILS**.

LAOS. See **FRENCH INDO-CHINA**.

LATAKIA. See **SYRIA AND LEBANON**.

LATEX. See **RUBBER**.

LATIMER, REAR ADMIRAL JULIAN LANE, U.S.N., RET. An American naval officer, died in New York, June 4, 1939. Born at Shepherdstown,

W. Va., Oct. 10, 1868, he was graduated from the U.S. Naval Academy in 1890, being appointed an ensign on July 1, 1892. He saw service during the Spanish-American War, with the Bureau of Ordnance (1903-06), on the *Virginia* (1906-07), as commander of the *Vesuvius* (1907), as executive officer and navigator of the *Montgomery* (1907-09), as inspector of ordnance and in charge of the Naval Magazine at Hingham, Mass. (1909-10), as commander of the *Culgoa* (1911-12), as executive officer of the *Vermont* (1912-13), as commander of the *Alabama* (1913-14), and as inspector of engineering material for the Massachusetts District (1914-16), and in command of the *Rhode Island* (1916-19).

After attending the Naval War College (1919-20), he was given command of the 7th Naval District and Naval Station at Key West (1920-21), and then became judge advocate of the Navy (1921-25), being promoted to rear admiral on Nov. 13, 1923. In 1925, Admiral Latimer was given command of the Special Service Squadron. Shortly afterwards, the Squadron was assigned to patrol duties in Nicaraguan waters and Admiral Latimer headed the U.S. Naval forces there during the revolutionary troubles of 1927. For his excellent work he received the Distinguished Service Medal. After 1927 he commanded the 4th Naval District and Navy Yard, Philadelphia, and retired in 1930.

LATIN AMERICA. See articles on the various countries of the Caribbean, Central America, and South America; also PAN AMERICANISM; PAN AMERICAN UNION.

LATTER-DAY SAINTS, CHURCH OF JESUS CHRIST OF. A religious body commonly known as the Mormon Church, organized in 1830 at Fayette, N. Y., by Joseph Smith. After the death of Joseph Smith in 1844, several factions developed, one of which became the Reorganized Church of Jesus Christ of Latter-Day Saints (Josephites). See RELIGIOUS ORGANIZATIONS.

LATVIA. A Baltic republic, established Nov. 18, 1918. Capital, Riga.

Area and Population. With an area of 25,402 square miles, Latvia had a population estimated at 1,981,000 on Jan. 1, 1939 (1,950,502 at the 1935 census). Of the total population, 35 per cent lived in communities of 2000 or more. Living births in 1938 numbered 36,386 (18.4 per 1000); deaths, 26,703 (13.5 per 1000); marriages, 15,971 (8.5 per 1000). The 1935 census populations of the chief cities were: Riga, 385,063; Liepaja (Libau), 57,098; Daugavpils (Dvinsk), 45,160; Jelgava (Mitau), 34,099.

National Defense. Military service is compulsory. The active army on Nov. 1, 1939, numbered 22,350 men, with 200,000 in reserve, according to the Adjutant General's Office, Washington, D. C. The air force comprised 350 men and 80 aircraft. A coast defense squadron consisted of 2 submarines and 4 other ships.

Education and Religion. The school attendance in 1937-38 was 271,195 (elementary, 231,533; secondary, 23,797; university, 7302). According to the 1930 census, 13.6 per cent of the population 10 years of age and older were illiterate. At the 1935 census, 56.13 per cent of the inhabitants were Protestants, 24.45 per cent Roman Catholics, 14.4 per cent Greek Catholics and members of the Orthodox Church, and 4.79 per cent were Jews.

Production. Agriculture, stock raising, lumbering and manufacturing are the principal sources of the national income, which was estimated at

1,200,000,000 lats in 1938. The chief cereals produced in 1939 (in metric tons), with 1938 figures in parentheses, were: Wheat, 198,700 (191,900); barley, 209,000 (220,600); rye, 429,700 (378,700); oats, 450,300 (446,600). The potato harvest in 1938 was 64,351,000 bu.; linseed, 803,000 bu.; flax, 47,311,000 lb. Livestock in 1938 included 1,224,000 cattle; 814,000 hogs; 1,360,000 sheep; 400,000 horses. Chief manufacturing lines were metallurgy, textiles, foodstuffs, woodworking and chemicals. Production of electricity totaled 223,000,000 kilowatt-hours in 1938.

The national wealth of Latvia was estimated at 6,580,000,000 lats on Jan. 1, 1939, distributed as follows: Agriculture, 2,582,000,000; fisheries, 4,000,000; private and municipal real property, 750,000,000; industrial plant and products, 347,000,000; communal property, 456,000,000; private commercial inventories, 500,000,000; household equipment, 431,000,000; and State property, 1,510,000,000.

Foreign Trade. Total imports in 1938 were valued at 227,336,000 lats (231,200,000 in 1937) and total exports at 227,204,000 lats (260,900,000 in 1937). See IMPORTS AND EXPORTS.

Finance. Budget estimates for the fiscal year ending Mar. 31, 1940, provided for receipts of 198,852,000 lats and expenditures of 198,696,000 lats. For the 1938-39 budget, revenue was estimated at 190,878,000 lats and expenditures at 190,481,000 lats. Actual receipts in 1937-38 aggregated 188,700,000 lats; expenditures, 173,800,000 lats. (Beginning Jan. 1, 1940, governmental budgets were to be computed on a calendar year basis.) The public debt on Mar. 31, 1938, was 156,596,000 lats (\$30,943,000 at the prevailing rate of exchange). The per capita debt was about \$15.60. The average value of the lat was about \$0.1939.

Transportation. Railway lines in operation at the end of 1939 aggregated some 2075 miles; highways and roads, 58,730 miles; inland waterways (1938), 2775 (see ROADS AND STREETS). The net tonnage of vessels entering Latvian ports with cargo and in ballast in 1938 was 1,344,000 (1,584,000 in 1937). The Latvian merchant marine in 1939 comprised 194,000 gross tons.

Government. A dictatorship was maintained throughout 1939 by Karlis Ulmanis, self-declared President since 1936, *de-facto* dictator since 1934, and previously Premier in accordance with the Constitution of 1922. The Minister of War, Gen. J. Balodis, in virtue of a law promulgated at the time of the Presidential coup of 1936, was authorized to take the post of President in the absence of Ulmanis. Political parties were forbidden.

History. Latvia's great concern in 1939 was to preserve as much as possible of the country's independence from domination by great powers, Germany and Russia, then engaged in acquiring territory from less powerful neighbors in the Baltic area. On June 7, impelled by the recent compulsory consent of Lithuania to the German acquisition of Memel, Latvia readily signed an agreement offered by Germany; it bound each party not to commit aggression against the other. The 1,905,330 Latvian citizens, as counted in 1935; included persons of German origin, to the proportion of nearly 3 per cent—a total of some 56,400 persons, not to mention German citizens in Latvia. The agreement signed in June gave Latvia reason to expect that these Germans would not become the basis of an irredentist campaign on the part of the Reich.

Within a few months Latvia, like Estonia (q.v.), found itself compelled to make an agreement of

very different import, this time with Russia. Signed October 5, it was ratified and took effect a few days later. The text of the important articles of this agreement follows:

Article I.—Both contracting parties undertake to render each other every assistance, including military, in the event of a direct attack, or threat of attack, on the part of any European great power, with respect to the sea borders of the contracting parties on the Baltic Sea, or their land borders through the territory of the Estonian or Latvian Republics, or also the bases referred to in article III.

Article II.—The Soviet Union undertakes to render assistance on preferential conditions to the Latvian Army in the shape of armaments and other war materials.

Article III.—In order to insure the safety of the U.S.S.R. and to consolidate her own independence, the Latvian Republic grants to the Union the right to maintain in the cities of Līpāja (Libava) and Ventspils (Vindava) naval bases and several air fields for aviation at a reasonable rental. The locations of the bases and air fields shall be exactly specified and their boundaries determined by mutual agreement. For the purpose of protecting the Straits of Irbe, the Soviet Union is given the right to establish on the same conditions a coast artillery base between Ventspils and Pitrags. For the purpose of protecting the naval bases, the air fields, and the coast artillery base, the Soviet Union has the right to maintain at its own expense on the areas set aside for bases and air fields a strictly limited number of Soviet land and air forces, the maximum number of which is to be fixed by special agreement.

Article V.—The carrying into effect of the present pact must in no way affect the sovereign rights of the contracting parties, in particular their political structure, their economic and social system, and their military measures. The areas set aside for the bases and air fields (Article III) remain the territory of the Latvian Republic.

Quite evidently the agreement of June with Germany and that with Russia in October could not both be observed by Latvia in every eventuality. The one, for instance bound her to help Russia if Russia were attacked by Germany; the other, to commit no aggression on Germany even if Germany should attack Russia. Latvia's change of stand obeyed a change of pressure. In June Germany had been the conspicuous disturber of the Baltic status. In October, Germany was engaged in a major war, and Russia improved the opportunity to remake the Baltic world more to its desire. At the beginning of October the Latvian Government was simply invited to send representatives to Moscow, which it promptly did, and these representatives were in turn invited to sign a fairly close counterpart of the document that Estonia's representatives had signed a few days before. There soon followed a commercial agreement, announced at Moscow October 18, promoting the transit of Russian commerce through Latvian ports and giving Latvian trade access to Russian ports on the Arctic and Black seas.

The German government had now to decide what to do about the small but capable minority of Germans living in Latvia. These included not only persons of German birth or recent German extraction but others, who had inhabited the present Latvia for several centuries—some, since 1224. All would have served the purpose of a German Government free to further the advance of German leadership in the Baltic area. But the German government, under Russian pressure, decided on a policy of "repatriation." Latvia and Germany signed, October 30, a treaty covering the particulars of the removal of Germans from Latvia: they might take their household goods but must sell most other possessions of value—must not take away gold, nor foreign currency, nor stocks-in-trade; and must sell out realty in three months if rural, in 14 if urban. Those who wished to stay were allowed to choose Latvian citizenship. All others were to have left by December 15, but subsequent extensions of time were allowed to some groups. The number that migrated to Germany

from Latvia by the end of 1939 was not definitely stated, but reports indicated that a considerable fraction had preferred to remain in Latvia and face the possibility of Russian domination there. About 17,000 Balts, persons of German origin from Latvia and other Baltic States, had been assigned by the end of the year to a projected German colony, Warthegau, in the Polish area of Posen.

See also EUROPEAN WAR under *The Eastern Front*; ESTONIA, GERMANY, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*.

LAVELLE, THE RT. REV. MGR., MICHAEL J. An American Roman Catholic priest, died in New York, Oct. 17, 1939, where he was born, May 30, 1856. Educated at Manhattan College (A.B., 1873), he entered St. Joseph's Seminary, Troy, N. Y., and was ordained to the priesthood in 1879, being assigned to the new St. Patrick's Cathedral. In 1886 he was appointed its pastor, a post he held at his death. In 1902, Cardinal Farley appointed him vicar general and diocesan consultor, to which he was reappointed by successive cardinals, and in 1903, Pope Pius X named him a Domestic Prelate with the title of Right Reverend Monsignor. In 1929, on the occasion of the 50th anniversary of his ordination, Pope Pius XI made him Prothonotary Apostolic, with certain privileges of a bishop.

Active in the life of the New York diocese until his death, among the many organizations in the foundation of which he was associated were the Cathedral Men's Club, the Catholic Young Women's Club, the Catholic Summer School of America (president, 1896-1903), the Catholic University of America, the Archdiocesan Union of Holy Name Societies, the Catholic Institute of the Blind, and the Catholic Theater Movement.

Monsignor Lavelle received the Order of St. Sebastian (1936) from the Catholic War Veterans, and was grand marshal of the St. Patrick's Day Parade in 1939. On June 7, 1939 he celebrated his golden jubilee and was the recipient of a citywide testimonial.

LAW. (See also PRISONS; INTERNATIONAL LAW; LABOR CONDITIONS; COURTS, FEDERAL; SUPREME COURT.)

GENERAL

Comparative Law. Among the articles dealing with comparative law during the year were:

"The Task and Organization of Comparative Jurisprudence," *Juridical Rev.*, LI, 124 (E. J. Cohn); "The Comparative Method in Legal History and Philosophy," *Tulane L. Rev.*, XIII, 350 (A. K. Kuhn); "The Handbook of Latin-American Studies," (Cambridge, 1938; contains a section on law and procedure; Lewis Hanke); "Exterior Treason," *U. of Chicago L. Rev.*, VI, 77 (H. Stern); "Classical and Illinois Law," *Jno. Marshall L. Quar.*, V, 53.

Jurisprudence and Legal Philosophy. Current articles in this field included:

"Realistic, a Critique of," *Rocky Mt. L. Rev.*, XI, 31 (D. G. Bishop); "A Philosophy of Law," *Notre Dame Lawyer*, XIV, 145 (C. C. Miltner); "Natural Law Symposium," *ib.*, XV, No. 1 (Llewellyn, Brown, Lobingier); "Cardozo's Philosophy of Law," *U. of Pa. L. Rev.*, LXXXVIII, 71 (E. W. Patterson); "Judicial Decision; Limitations," *Cornell L. Quar.*, XXIV, 611 (S. H. Hirshman); "Public and Private Law," *ib.*, 469 (Pound); "Stare Decisis," *Cal. St. Bar Jnl.*, XIV, 175 (C. A. Sunderlin); *Va. L. Rev.*, XXV, 12 (R. Laun); "Petrazhitskii-Theory of Law," *Boston U. L. Rev.*, XVIII, 511 (H. W. Babb); "The Crisis in Marxian Theory of Law," *N. Y. U. L. Quar. Rev.*, XVI, 519 (N. S. Timasheff); "Involution in Law," *Georgetown L. J.*, XXVII, 732 (Giorgio del Vecchio); "Legal Classification," *A. B. A. Jnl.*, XXV, 383 (W. A. Lavery); "There is no Federal Common Law" is asserted by W. C. Wolfe in *Tenn. L. Rev.*, XV, 7 and "The Collapse of 'General Law' in the

Federal Courts, by McCormick & Hewins, *Ill. L. Rev.*, XXXIII, 126. These two last articles relate to the decision in *Erie R. Co., v. Tompkins* (1938 *NEW INTERNATIONAL YEAR BOOK*, 393) which has evoked numerous other comments, e.g. *Harv. L. Rev.*, LII, 102; *Columbia L. Rev.*, XXXVIII, 1472; *Mich. L. Rev.*, XXXVI, 1249, 1312; *Cornell L. Quar.*, XXIV, 54 (E. S. Stimson); *Kan. St. Bar Ass'n. Jnl.*, VII, 322; *Tex. L. Rev.*, XVI, 512 (B. Schmidt); *Temple L. Quar.*, XII, 486; *Ind. L. J.*, XIII, 564; *Oreg. L. Rev.*, XVIII, 304 (D. Ellis); *Mo. Bar Jnl.*, IX, 108; *U. of Cin. L. Rev.*, XIII, 469; *Dicta*, XV, 307; *Boston U. L. Rev.*, XVIII, 659 (H. M. Bowman); *Miss. L. Rev.*, XI, 3 (U. R. Miller); "The Doctrine Applied to International Law," *Am. J. of Int. L.*, XXXIII, 740 (P. C. Jessup).

Legal History. Many interesting phases of ancient law were involved during the year.

Roman: "Statute and Judge in Roman Criminal Law," *Wash. L. Rev.*, XIII, 291 (E. Levy); "Praetor and Chancellor," *Tulane L. Rev.*, XIII, 163 (W. W. Buckland); "Gaius and the Liber Singularis," *L. Quar. Rev.*, LIII, 508 (*id.*); "Nocere et Noxa," *Cambridge L. Jnl.*, VII, 23 (D. Daube); "Roman and English Law to the 16th Century," *U. of Toronto L. Jnl.*, III, 24 (F. T. Plucknett); "Roman Sources of English Legal Principles," *Am. L. Sch. Rev.*, VIII, 1233 (R. J. C. Dorsey); "Marriages in Hellenistic and Postclassical Roman Law," H. J. Wolf, (pp. vi + 128, Haverford, Pa., 1939); "Studies in the Glossators (12th cent.) of the Roman Law," (Cambridge, 1938; Kantorowicz & Buckland).

Anglican. The ancient doctrine of "treasure trove" (finds accruing to the King) was applied in connection with the valuable relics found recently in a buried ship of the Saxon period on an estate in Suffolk, England. A coroner's jury of 14 found that the owner had not intended to reclaim the relics which was, in effect, finding that they were not "treasure trove." Current articles are:

"Trial by Battle," *Cal. St. Bar Jnl.*, XIII, 43 (V. P. Lucas); "The Court of Chivalry," *Los Angeles Bar Bull.*, XIV, 113 (A. B. Bowman); "Benefit of Clergy," *Kan. St. Bar Ass'n. Jnl.*, VII, 362 (A. Blume); "The Legal Position of English Dissenters, 1767-1812," *Va. L. Rev.*, XXV, 671 (C. F. Mullett); "Luckless Duchess of Kingston (*Res Adjudicata*)," *Rocky Mt. L. Rev.*, XI, 159; "A Princely Judgment (Earl of Ormond's Case)," *Minn. L. Rev.*, XXIII, 925 (E. S. Blade); "Lawyers and Litigants in Stuart England," *Cornell L. Quar.*, XXIV, 533. **American:** "Connecticut's First Constitution," *Conn. Bar Jnl.*, XIII, 44 (E. C. Humphrey); *The Fundamental Orders*, *ib.* 52 (P. McCook); "Colony Ordinance of 1641-47 and its Effect on Maine Law," *Peabody L. Rev.*, III, 77 (L. E. Norwood); "Admission to the Bar in Revolutionary America," *Comm'l. L. Jnl.*, XLIV, 52 (W. R. Blackard); "John Marshall and the Campaign of History," *Columbia L. Rev.*, XXIX, 396 (M. Lerner); "James Madison Not a Lawyer," *A.B.A. Jnl.*, XXV, 821 (E. S. Corwin); "Before *Madison v. Marbury*," *Okl. St. Bar Jnl.*, IX, 158 (J. H. Hill); "The Cycles of Government," *Oreg. L. Rev.*, XVIII, 12 (O. R. McGuire); "Legal Development During Industrial Growth," *U. of Cincinnati L. Rev.*, XII, 519 (F. R. Aumann); "Origin and Development of Quo Minus," *Yale L. Jnl.*, XLIX, 39 (H. Wurzel); "Three Centuries of American Litigation," *Temple U. L. Quar.*, XIII, 488 (A. S. Faught); "The Burr Trial," *Rocky Mt. L. Rev.*, XI, 233 (P. Hornbein).

Legislation. GENERAL. The A.B.A. (*Jnl.* XXV, 618) Com. on "Noteworthy Changes in Statute Law," reported trends toward centralization, government regulation, etc., but counter trends toward interstate co-operation and others toward competition.

"Some Implications of Recent Legislation" are discussed in *W. Va. L. Quar.*, XXIV, 205 (R. Pound); "The Legislative Process," *Cornell L. Quar.*, XXIV, 233 (A. L. Moffatt); "Scientific Legislation," *Peabody L. Rev.*, III, 100 (F. S. Sturgis); "Retrospective Effect of Repeal," *Ky. L. Jnl.*, XXVII, 75 (C. Seeman, Jr.); "Use of 'Shall' in Statutes," *John Marshall L. Quar.*, IV, 204 (D. E. Sutton); "Legislative Pardons," *Cal. St. Bar Jnl.*, XIV, 97 (C. M. Buford); *Cal. L. Rev.*, XXVII, 321 (Weihofen & Radin).

United States. Federal. The 76th Congress opened its first session on January 3 and closed it on August 5. Outstanding measures passed and

not mentioned below, include the "Hatch Bill" regulating the political activities of the government personnel and a civil service retirement act which applied to postmasters. (See *UNITED STATES*, and also the several States for legislative activities.)

Florida. Code Revision for, is discussed in *Fla. L. Jnl.*, XII, 211 (J. R. Wilson).

Nebraska. The Unicameral Legislature is reported as co-operating more effectively than its predecessor and as treating legislation "as something more than sport and politics." Out of 139 acts passed at the 1939 session, 107 included the emergency clause, (formerly rare), taking effect at passage.

New Jersey. Statutes of 1937 are discussed, *U. of Newark Rev.*, III, 173 (V. P. Biunno).

New York. 1938 legislation is reviewed, *Int. Jurid. Ass'n. Bull.*, II, 40; "A Law Revision Program," *Cornell Law Quar.*, XXIV, 139 (T. M. Nichols). In *People v. Tremain*, 281 N. Y., the court held invalid the legislative revision of the "executive budget, with 'lump sum cuts.'" A special session was called to rectify the error.

North Carolina. "A Survey of 1939 Statutory Changes," *N. Car. L. Rev.*, XVII, 327.

Pennsylvania. "Reasoning by Analogy from Statute," is discussed in *Dickinson L. Rev.*, XLIII, 234 (R. P. Shaddle).

Utah Bar Bull., IX, 60 (P. S. Van Cise) discusses Code Revision.

Washington. 1939 legislation is reviewed in *Wash. L. Rev.*, XIV, 181 (Luccock & Kaminoff).

Interstate Compacts. "Law applicable to interstate Compacts" is discussed in *Utah Bar Bull.* VII, 147 (J. Chez). Compacts were approved by Congress as follows: Between Colorado, New Mexico, and Texas, regulating use of Rio Grande waters; between Colorado, Kansas, Oklahoma, Texas, New Mexico, and Michigan, regulating oil production (2 yrs.); between Missouri and Iowa, settling a 100-year boundary dispute. Virginia and Maryland police were authorized to pursue suspected criminals into the District of Columbia. On January 4 a compact for reciprocal motor bus registration was signed by representatives of New York, New Jersey, and Pennsylvania.

Interstate Competition. While certain States were thus co-operating in legislation on subjects of common interest, and while the Federal government was effecting international legislation in the form of treaties, to promote foreign trade, other States were moving in the opposite direction, with motor vehicle regulation, discriminating against outside States (upheld in *So. State Highway Dept. v. Barnwell Bros. Inc.*, 303 U.S. 176); "use or compensating taxes," designed to prevent evasion of the local sales tax (upheld in *Hanneford v. Silas Mason Co.*, 303 U.S. 176; *So. Pac. Co. v. Gallagher*, 306 U.S. 167); exclusion of intoxicating liquors from outside the state (upheld under Const. Amdt. XXI, 2 in *Ind. Brewing Co. v. Mich. Liquor Control Com.*, 305 U.S. 391). Bills introduced in various legislatures indicated a disposition to go much farther and practically to nullify the interstate commerce clause. The State Government Council has undertaken to seek a remedy and has enlisted the aid of certain members of Congress.

Abroad. (See also the various countries.)

England. The Law Revision Committee's 7th Annual Report recommends correction by statute of the rule announced in *Chandler v. Webster*, 1 K.B. (1904), 493 (See *A.B.A. Jnl.* XXV, 802).

Canada. 1939 legislation is reviewed in *Comparative Law Series* II, 397 (K. E. O'Connor).

Brasil. A revision of the Civil Code in 1052 articles, touching on procedure as well as substantive law, was announced in September.

Czecho-Slovakia. A Berlin decree, published in

Prague on June 27, authorizes the Reich "Protectorate" to modify the "Autonomy" law of March 16, when that "seems in the common interest," to enact laws when "delay seems dangerous" and to alter existing Czech law "when it conflicts with German interests." The Czech government is left with little more than nominal powers.

Italy. The second volume of the new Civil Code was deposited in the state archives on Capitoline Hill, by the Minister of Justice, pursuant to ancient Roman custom as revived by Fascist regime.

ADMINISTRATION

Courts. In General. Current reviews contain, "The Courts in a Modern Democracy," *Brooklyn L. Rev.*, VIII, 397 (M. Steinbrink); "Need of Efficient Court Structure," *Am. Jud. Soc. Jnl.*, XXII, 4 (P. D. Burns); "Inherent Power in Courts," *Comm'l. L. Jnl.*, XLIV, 37 (A. A. Begeaus); "The Fee System," *ib.* XLIII, 480 (L. B. Moore); "Types of Litigation and Social Data," *Columbia L. Rev.* XXXIX, 776 (Thorndyke & Jacoby); "Some Realism About Judicial Statistics," *Va. L. Rev.* XXV, 528 (S. B. Jacoby); "Maladjusted Features of the American Judiciary," *Okla. St. Bar Jnl.*, X, 5 (Moore & Hughes); "Overruling Decisions," *ib.* 210 (C. M. Dunaway); "Dissenting Opinions," *Comm'l. Law Jnl.*, XLIII, 468 (E. A. Evans); "Speeding up the Courts," *Tenn. L. Rev.* XV, 596 (E. R. Finch); "Exercise of Non-Judicial Functions by," *Kan. St. Bar Ass'n Jnl.*, VII, 172 (O. G. Vose).

Judicial Selection is discussed in the following current reviews: *Am. Jud. Soc. Jnl.*, XXII, 207 (J. H. Wigmore); *ib.* 199 (Mich., G. E. Brand); *Mo. Bar Jnl.* X, 13 (Mo., E. E. Silvers); *ib.* 197 (O., H. L. Barkdull). Appointment by Governor Moore to New Jersey's highest court of Frank Hague, Jr., "to make his father happy" brought a storm of protest, including an especially vigorous one from former Senator Clee, but was, nevertheless, confirmed by a Senate controlled by the opposition party. Jane Bolin, 31, Wellesley College and Yale Law School graduate, appointed to the New York City Domestic Relations Court by Mayor La Guardia, is said to be the first colored woman judge; colored Magistrate Paige was promoted to the Court of General Sessions, Jan. 1, 1940.

Discipline. The trials of ex-Judge Manton of the second Circuit Court of Appeals and of County Judge Martin of Brooklyn, the former being convicted and the latter acquitted, on charges of bribery by juries on the same day, disclosed a shocking state of affairs in these two important courts of the metropolitan area. In sentencing the former, Judge Chesnut declared that there had been "no such conspicuous parallel . . . since Francis Bacon"; but a letter to the New York *Times* called attention to the later English cases of Jeffreys and Macclesfield. Manton's appeal was heard in the court over which he once presided, but before a special panel of judges, including former Supreme Court Justice Sutherland, Justice Stone, and Circuit Judge Clark, who affirmed the conviction on December 5. Martin, notwithstanding acquittal by the Brooklyn jury on the criminal charge, was tried before the New York State Senate upon charges of malfeasance preferred by Governor Lehman and, on November 16 was absolved. Current articles on these cases appear in *Minn. L. Rev.* XXIII, 185 (J. Brock); *Los An-*

gles Bar Bull. XIV, 119; *N. Y. Times*, January (C. L. Griffin).

Territorial Jurisdiction. Federal Courts have exclusive jurisdiction over the Chickamauga and Chattanooga National Park (*Bowen v. Johnston*, 306 U.S. 19, 59 S. Ct. Rep. 442), but since Virginia retained concurrent jurisdiction over the George Washington Memorial Parkway, the State courts claim jurisdiction over those charged with capital offenses committed therein (*U.S. v. Gibson*, Dist. Ct.). Jurisdiction over government lands in Washington State is discussed in *Wash. L. Rev.* XIV, 1 (J. N. Rupp).

United States: Supreme Court. The October (1938) term ended on June 5, 1939. During it the court disposed of 923 cases, but opinions were filed in but 174, the average for each justice being about 19. Petitions for *certiorari* were denied in 676 cases. Justice Brandeis retired on February 13 and was the subject of many eulogies for his near quarter century of service, e.g. *Cal. St. Bar Jnl.*, XIII, 20 (M. O. Tobriner). Wm. O. Douglas, Chairman of the SEC, appointed to succeed him, took office on April 15.

An important Act of Congress affecting the Court was that of August 7 (now Ch. XV of the Judicial Code) creating the "Administrative Office of the U.S. Courts" under a Director and Assistant appointed by the Supreme Court (with employees subject to the civil service laws) who "shall have charge, under the supervision and direction of the conference of senior circuit judges, of all administrative matters relating to the offices of the clerks," etc.; inspection of dockets for statistical and other matter; disbursement of court appropriations; supply of equipment; examination and audit of accounts; "providing accommodations," and "such other matters as may be assigned to him." The purpose is to make the Federal judiciary financially independent of the executive branch, and it may lead to much more. The Director, with his intimate knowledge of the needs and operation of the courts, may displace the Attorney General as the adviser of Congress regarding them, even as to judicial appointments. The Supreme Court's 1939 term, opened on October 2, with all members present except Justice Butler, who had been ill for some time and who died November 16. On December 18, the Court recessed until January 2 with only 27 submitted cases undisposed of. Current articles include:

"The Genesis," *Va. L. Rev.*, XXV, 398 (S. Teiser); "Personnel," *Nat. Lawyers' Guild Quarterly*, II, 9 (M. Lerner); "Recent Changes," *Fed. Bar Ass'n Jnl.*, III, 337 (G. E. Moore); "Preview of a Justice," *Yale L. J.*, XLVIII, 819 (W. Hamilton); "Mr. Justice Black vs. the Supreme Court," *U. of N. Y. L. Rev.*, IV, 113 (R. F. Green), (Editors of the Yale Law Journal and Columbia L. Review wrote the *N. Y. Times* on February 11, commending Justice Black who was awarded the Thomas Jefferson Medal by the Southern Conference for Human Welfare); "In Our Highest Court," *L. Soc.*, VIII, 382 (W. F. Donovan); "Limiting the Voting Power," *O. St. U. L. Jnl.*, V, 54 (R. L. Hausser).

Articles on other Federal Courts were:

"Senior Judges Plan to Integrate Federal System," *Am. Jud. Soc. Jnl.*, XXII, 160; "Business of the U.S. District Courts," *U. of Kan. Cy. L. Rev.*, VII, 215 (M. E. Otis); "Jurisdiction by Removal," *La. L. Rev.*, I, 499 (I. S. Flory); *St. John's L. Rev.*, XIII, 71; "Fair Comment in," *ib.* 342 (J. L. Connors); "Divestment of Federal Jurisdiction," *Columbia L. Rev.*, XXXIX, 595 (Schlesinger & Strasburger).

Juries. Under the new Federal Rules of Procedure, a jury is waived if not demanded within 10 days after service of the last pleading (Rule 38 b, d); alternate jurors are provided (*ib.* 47 (b);

juries "of any number less than 12" and verdicts by "a stated majority" are permitted by consent of parties (*ib.* 48). How defective our jury system really is appears in three recent and notable criminal cases: (1) the conviction of a New York barber of attempting to tamper with a juror in the Hines Case (1938 YEAR BOOK, 397); see also on this case, *Boston Bar Bull.*, CXL, 3 (J. M. Maguire); *Cal. St. Bar Jnl.* XIII, 32 (P. S. Sommer); (2) the acquittal of Judge Martin (*ante* p. 420) by a Brooklyn jury; (3) conviction of an accused in an income tax prosecution of tampering with a prospective juror, Special Prosecutor Amen disclosed that out of 30 persons whose names were taken at random from a "blue ribbon" jury panel (1938 YEAR BOOK, 395), "eight had police records and one or two had even been convicted of felonies."

Current articles on juries include:

"Selection," *Am. Jud. Soc. Jnl.*, XXII, 209 (A. S. Osborn); "As Judges of Criminal Law," *Harv. L. Rev.*, LII, 582 (M. D. Howe); "Instructions to," *Kan. St. Bar Ass'n. Jnl.*, VII, 294 (J. A. Williams); *Los Angeles Bar Bull.*, XIV, 67; "Improving Jury Trials," *Ill. L. Rev.*, XXXIV, 236.

Administrative Tribunals. General. Administrative Law furnishes six columns of titles for articles listed in *Current Legal Thought's Index for 1939* (as it did for 1938). Answer to the question, "What is Administrative Law?" is essayed in *Geo. Wash. L. Rev.*, VII, 681 (J. F. Davison); "The Place of Administrative Law," *Conn. Bar Jnl.* XIII, 71 (J. M. Landis); "Court and Bureau Systems Contrasted," *Ia. L. Rev.*, XXIV, 25 (J. O. Boyd); "Administrative Law Problems," *N. Y. St. Bar Ass'n. Bull.*, XI, 38 (E. Gluck); *Fed. Bar Ass'n. Jnl.*, III, 239 (O. R. Maguire); "Comparative Administrative Law," *U. of Pa. L. Rev.* LXXXVII, 954 (F. M. Marx); In France, *Boston Univ. L. Rev.*, XVIII, 715 (S. Riesenfeld); In England, *Canadian Bar Review*, XVII, 166 (J. Finkelman); In Ohio, *U. of Cin. L. Rev.*, XIII, 191 (F. Woodbridge); In West Virginia, *L. Quar.*, XLIV, 270; XLV, 291 (K. C. Davis); "As Legislators and Judges," *A.B.A. Jnl.*, XXV, 923 (W. F. Dodd).

Federal Administrative Agencies. In *A.B.A. Jnl.* (XXV, 25) Dean Wigmore discusses the rules of practice and rulings, especially those relating to evidence, of 28 such agencies which "hold hearings, adopt regulations of procedure, make decisions," etc. Current articles relating to particular agencies are; "Board of Tax Appeals," *D. C. Bar Ass'n. Jnl.*, V, 391 (J. V. Morgan); "Federal Communications Commission," *Geo. Wash. L. Rev.*, VII, 740 (L. G. Caldwell); *ib.* 777 (W. J. Dempsey); *Georgetown L. Jnl.*, XXVII, 783 (M. Malin); *Air L. Rev.*, X, 88; "Judicial Control," *Harv. L. Rev.*, LIII, 131; "Federal Alcohol Administration," *W. L. Rev.*, VII, 844, 949; "Federal Trade Commission," *N.Y.U.L. Quar.*, XVI, 121; *G.W.L. Rev.*, VII, 283 (R. E. Freer); *D. C. Bar Ass'n. Jnl.*, V, 397 (W. N. Baughman); "Evidence," *Wash. L. Rev.*, XIV, 37 (W. F. Daniels); "Maritime Commission," *Fed. Bar Ass'n. Jnl.*, III, 315 (P. D. Page); "National Labor Relations Board," *A.B.A. Jnl.* XXV, 695 (Chas. Fahy); *W. Va. L. Quar.*, XLV, 93 (J. W. Madden); *Boston U. L. Rev.*, XIX, 32 (R. M. Goldstein).

The Securities and Exchange Commission has been the subject of many articles:

The Act of 1933, *U. of Chic. L. Rev.*, VI, 399; *Exemptions*, *Boston U. L. Rev.*, XVIII, 613 (G. D.

Bleicken); "Registration Requirements," *Los Angeles Bar Bull.*, XIV, 80 (H. A. Judy); "Accounting Practice," *Mich. L. Rev.*, XXXVII, 288 (P. R. Trigg); "Stop Order Proceedings," *ib.* 452 (B. H. Lebeis); "Withdrawal," *ib.* 1276 (F. C. Newman); "Further Developments in Disclosure," *Ill. L. Rev.*, XXXII, 145 (B. MacChesney); "Act of 1934 (Unlisted Trading Privileges)," *Mich. L. Rev.*, XXXVII, 98 (M. L. Plant).

Administrative Procedure. General: *Harvard L. Rev.*, LII, 259 (R. F. Fuchs); *U. of Pa. L. Rev.*, LXXXVII, 139, *A.B.A. Jnl.*, XXV, 543 (C. B. Stephens); *ib.* 453 (M. McDermott); *G.W.L. Review*, VII, 703 (C. B. Aitchison); *Los Angeles Bar Ass'n. Bull.*, XIV, 313; "The Trial Authority in Administrative Procedure," *Am. Jud. Soc. Jnl.*, XXIII, 112 (C. S. Lobingier).

Hearing. In *Shields v. R. Co.*, 305 U.S. 177 59 *Sup. Ct. Rep.* 160, the question of what constitutes a hearing is again discussed and the ICC's ruling is upheld as against that of the circuit and district courts. The original discussion was in *Morgan v. U.S.* 298 U.S. 463, 304 U.S. 1, which is reviewed in *Harvard L. Rev.*, LII, 509; *G.W.L. Rev.*, VII, 726 (K. C. Sears); *U. of Cin. L. Rev.*, XII, 598 (J. Wise). Requirements of a "full hearing" are also discussed in *Mich. L. Rev.*, XXXVII, 597 (C. E. Brooks); "Notice and hearing in Minimum Wage Regulation," in *Wash. U. L. Quar.*, XXIV, 233 (C. Anschuetz); "Administrative Contempt, Powers," *A.B.A. Jnl.* XXV, 954 (E. F. Albertsworth).

Evidence before administrative tribunals is the subject of articles in *Conn. Bar Jnl.*, XII, 278 (J. L. Collins); *Mo. L. Rev.*, III, 457 (Production); H. C. Lisle); *Rocky Mt. L. Rev.*, XI, 77 (Exclusion); F. Swancara); *D.C. Bar Ass'n. Jnl.*, V, 397 (Fed. Trade Com.; W. N. Baughman); *Minn. L. Rev.*, XXIII, 68; *Cornell L. Quar.*, XXIV, 583; *Harv. L. Rev.*, LIII, 105.

Review. In *Rochester Tel. Corp. v. F. C. Comm'n.*, 307 U.S. 125; 59 *Sup. Ct. Rep.* 754, the court discarded the phrase "negative orders" as a test of reviewability, considered upon its merits the order complained of, and upheld it. Such orders are discussed in:

Wash. U. L. Quar., XXIV, 591 (C. Anschuetz); *G. W. L. Rev.*, VII, 1014 (G. E. Moore); *U. of Chic. L. Rev.*, VI, 277. Other articles on review are found in *Am. Jud. Soc. Jnl.*, XXII, 237 (R. M. Hoyt); *Notre Dame Lawyer*, XIV, 233; *Mo. Bar Jnl.*, IX, 143 (I. L. Dulin); *Cornell L. Quar.*, XXIV, 235 (In N. Y.; A. E. Moscovitz); *Temple U. L. Quar.*, XIII, 30 (In Pa.; A. S. Faught); *W. Va. L. Rev.*, XIV, 270 (In W. Va.; K. C. Davis).

The Logan Bill for a special court to review the work of administrative tribunals, sponsored by the A.B.A. (*La. L. Rev.*, I, 550; O. R. McGuire), was passed by the Senate on July 18, but was later recalled and placed on the calendar. The author of it died on October 2. See also *Cal. L. Rev.*, XXVII, 738; *Chicago-Kent L. Rev.*, XVII, 342; *A.B.A. Jnl.* XXV, 770 (K. C. Davis); 838 (C. Duffy); 840 (W. Clay); *Air L. Rev.*, X, 271 (Radio; J. J. Hayden).

Stare Decisis. See *N.Y.U.L. Quar.* XVI, 618.

Causes Célèbres. The administrative hearing in proceedings for the deportation of Harry Bridges, Australian West Coast labor leader, was opened at Angel Island, San Francisco, on June 26, with Dean Landis of the Harvard Law School presiding as Trial Examiner, and continued until August. Dean Landis filed his Report on December 29, finding the evidence insufficient to justify deportation. See BRIDGES CASE.

On July 26, the Washington District Court dismissed an indictment of the American Medical

Ass'n. and certain subsidiaries under the anti-trust act, charging a conspiracy to restrain the Group Health Ass'n. Inc. (composed of government employees) and others from providing medical care. The court declined to treat the medical profession as a "trade" within the act's meaning. A direct review by the Supreme Court was denied, but an appeal by the government was heard by the Court of Appeals in December. See *MEDICINE AND SURGERY*.

On September 11, the Georgia Court of Appeals affirmed a Superior Court's order revoking a charter prematurely granted to the "M. E. Church South, Inc.," a schismatic body organized to defeat the recent merger of three branches of Methodism. Meanwhile various Methodist Protestant Churches in New Jersey and other northeastern States have resisted surrender of church property to the new body.

On October 24, in *Nazinitzky v. Sincoff*, 102 N. Y. L. Jnl. 1284, the Appellate Division of the New York Supreme Court in Brooklyn reversed a ruling of the trial justice and upheld a pedestrian's right to complete a crossing under a favorable light which changes before the opposite curb is reached.

Legal Education. The Roman law school at Berytus (now Beirut) in the second century A.D. afforded the subject of an attractive painting in the Lebanon Exhibit at the New York World's Fair. According to the latest information received, the list of American law schools had been reduced to 180 (as compared with 77 medical schools) of which 102, with two thirds of the country's total law student enrollment, have been approved by the A.B.A. Four Washington City law schools have announced their intention to seek such approval, which, if granted, will give that city 8 approved schools. Illinois has 8 law schools, California 19, while 8 States have none. William & Mary College (second oldest in the country) established in 1779 the first law professorship. Its Board of Trustees voted on May 27 to discontinue conferring law degrees, but upon protests of alumni and others rescinded that action on June 2. Of the list mentioned above, 9 require, as Delaware, Kansas, and Pennsylvania, the equivalent of a college degree for entrance; 32 and the Wisconsin statute require three years of college; 113 require two years, one requires one year, and 25 accept high school diplomas or less. South Dakota and Maryland have adopted the two-year college requirement, bringing the total number up to 41. Eight States are still without that requirement.

The law schools of Minnesota and Washington State Universities now require a full time four year course (*N. Car. L. Rev.*, XVII, 242); in 5 others, such a course is optional. On July 21, the U.S. Senate passed the Sheppard Bill, prohibiting discrimination in favor of certain law schools in selecting government attorneys (see *A.B.A. Jnl.*, XXV, 402 for adverse comment).

Current articles on legal education in general are found in:

Conn. Bar Jnl., XIII, 136 and *Fla. L. Jnl.*, XII, 378 (R. G. Storey); *A.B.A. Jnl.*, XXV, 559 (C. H. Kinnane; Standards); *Boston Bar Bull.*, No. 138, p. 4 (R. Pound); *ib.* 6 (D. A. Dooley); *ib.* No. 139, p. 5 (Will Shafroth); *ib.* XXX, 9 (W. H. Hitchcock); *Wash. U. L. Quar.*, XXIV, 476 (B. Currie); *Mo. Bar Jnl.*, X, 11 (C. W. Wickersham); *Los Angeles Bar Ass'n. Bull.*, XIII, 373 (T. R. Sulner); *In England, Wis. L. Rev.*, 1938, p. 547 (C. C. Elbridge); *A.B.A. Jnl.*, XXIV, 603 (Lord MacMillan); *In Soviet Union, Wis. L. Rev.*, 1938, p. 562; *In France, ib.* (1939) 473 (F. Deak); *Pre-Legal, Cal. St. Bar Jnl.*, XIII, 6 (C. H. Kinnane); *ib.* 39 (J. A. Hadaller); *Pre-Law and Post-Law, Am. L.*

School Rev., IX, 274; *Law Institutes (for Lawyers), Cal. St. Bar Jnl.*, XIII, 9; *Chicago Bar Record*, XX, 63; *Mich. St. Bar Jnl.*, XVIII, 59; *L. Soc. Jnl.*, VIII, 424; *In general, A.B.A. Jnl.*, XXIV, 829 (W. L. Flory); *La. L. Rev.*, I, 139 (J. H. Tucker); "A Generation of Law Teaching," *Mich. L. Rev.*, XXXVIII, 16 (R. Pound); "The Sponsor System Under Law School Auspices," *A.B.A. Jnl.*, XXV, 849; "Character Examination in Pennsylvania," *ib.* 873 (R. T. McCracken).

The Curriculum afforded the principal subject of discussion at the December (1938) meeting of the Association of American Law Schools (see *Am. Law Sch. Rev.*, IX, No. 3, where several of the papers appear). Dean Landis of the Harvard Law School has announced plans under consideration to integrate the curriculum with other social sciences—anthropology, psychology, medicine, economics, and government. A similar integration had already been announced by the Chicago Univ. Law School. The late Justice Cardozo's bequest for a chair of Jurisprudence and Legal Philosophy bears fruit in the requirement of those courses for future third-year students at Columbia University Law School. Articles in the following periodicals relate to the curriculum: *Duke Bar Ass'n. Jnl.*, VII, 73 (W. C. Lassiter); *Georgetown L. Jnl.*, XXVII, 884 (Wm. Moore; Fed. Rules); *O. St. Univ. L. Jnl.*, V, 344; *Kan. St. Bar Ass'n. Jnl.*, VII, 153 (F. J. Moreau). Legal writing has been made a required course in Western Reserve University Law School.

Personnel. Prof. E. Blythe Stason, specialist in administrative law, succeeded Dean Bates as head of the Michigan University Law School. Articles on Dean Bates appear in *Mich. L. Rev.* XXXVIII, 1, 3. At Yale, Prof. A. G. Gulliver was appointed acting Dean owing to the accession of Dean Clark to the U.S. Circuit Court of Appeals. Dean Arant of the Ohio State University Law School continued at his post for the balance of the year, notwithstanding his appointment to the 6th Circuit Court of Appeals.

Legal Profession. Bar Integration. (*cf.* 1938 YEAR BOOK, 396) moved steadily forward in 1939 and a nation-wide movement is discussed by Herbert Harley in *Am. Jud. Soc. Jnl.*, XXII, 211; *Fla. L. Jnl.*, XII, 296; XIII, 39; *Tenn. L. Rev.*, XV, 796. Its progress in the several States may be ascertained in the following: *California: St. Bar Jnl.*, XIII, 35 (S. M. Reinhaus) *ib.* XIV, 89 (E. D. Moore); *Los Angeles Bar Ass'n. Bull.* 354. *Indiana: "Does Indiana Need an Integrated Bar?" Ind. L. Jnl.*, XIV, 529; *Ind. L. Jnl.*, XIV, 235; *Michigan: St. Bar Jnl.*, XVII, 448 (G. E. Brand); XVIII, 150 (H. H. Platt); *Montana: The Supreme Court refused to order integration. In re unification, etc.*, 107 *Mont.* 559, 87 *Pac.* (2d), 172; *Ohio: An intensive movement for integration has been in progress during the year; Oklahoma: After the legislature had repealed the integration act, the Supreme Court entered an order defining who should be entitled to practice and creating an "executive council" for their government, thus virtually continuing the integrated bar.*

Conferences, Conventions, etc. The National Lawyers' Guild held its annual meeting at Chicago in February. The address of Justice Pecora, retiring President, condemned "tyranny of labor and capital" and was approved by the Executive Board for distribution to members but not to the public. That omission, while later rescinded, led to a number of resignations by prominent members. See "Liberalism and the National Lawyers' Guild," (Gutknecht), *Nat. Lawyers' Guild Quar.* II, 1; "Democracy and the Legal Profession," *ib.* 5 (Pecora).

American Law Institute held its 17th annual meeting in Washington, May 11-13. In the absence of Ch. J. Hughes, through illness, the judicial address was given by Justice Butler who told the body that it need not rewrite the Constitution since that was being done by the Supreme Court, of which he was then a minority member. The proposed final draft of the "Restatement of Torts," in preparation for sixteen years by 41 reporters and advisers who considered 145 preliminary drafts, was completed and found to "cover a much wider field than any of the others." Sharp debates occurred over rules affecting labor. Tentative drafts of Property and Security were also presented (and see *Proof, infra.*). Judge H. T. Lummis of the Massachusetts Supreme Judicial Court was elected to the Council and likewise a group of new members. It was reported that by the middle of 1939, the Institute's Restatements had been cited in 3904 cases. (See *A. B. A. Jnl.*, XXV, 469, 744).

American Bar Association held its sixty-second annual meeting at San Francisco, July 10-15. The Assembly and the House of Delegates had three sessions each and the latter held an adjourned session at Chicago in December. Charles A. Beardsley of California, was elected President and various administrative officers were re-elected. Achievements of the Association, afford the subject of a series of articles in its *Journal*, XXV, 903, XXVI, 19, 135 (M. Radin).

Economic Situation of lawyers is discussed in *Boston Bar Bull.* No. 145 p. 6 (P. Wallis); *Los Angeles Bar Ass'n. Bull.* XIV, 55 (E. D. Moore). **Fees:** *Conn. Bar Jnl.* XIII, 112 (J. L. Kotler); in stockholders' actions, *Columbia L. Rev.*, XXXIX, 784 (G. D. Hornstein).

Ethics and Discipline:

In Maine, *Peabody L. Rev.*, III, 38 (B. G. Ward); In N. Car., *Duke Bar Ass'n. Jnl.*, VII, 22 (F. S. Hutchins); "The Lawyer and the Criminal Practice," *Boston Bar Bull.*, No. 146, p. 5 (W. G. Hollingsworth); "How Far May a Lawyer Go for His Client?" *ib.*, 14 (B. C. Tomlinson); "Advertising," *ib.* 18 (C. V. Renner); *Ky. St. Bar Jnl.* III, 20 (F. Robbins). Territorial Senator Charriez of Puerto Rico was fined \$5 and committed to jail for 15 days by District Judge Romani, on February 1, for defiantly refusing to sit down when ordered.

Penal Law. On February 9, armed white men took from the jail at Goldsboro, N. C., two Negro prisoners charged with assaulting the mayor, and flogged them severely. "Anti-Lynching Legislation in New York" is discussed in *St. John's L. Rev.* XIII, 209 (M. Friedman). A study published recently by the Columbia University Press discloses that in colonial New York, even after the Revolution, sixteen crimes were punished by hanging first time offenders, and a like number of felonies were similarly punished in case of second conviction. This, however, was moderate as compared with the situation then existing in England where 64 crimes were capital.

Double Jeopardy. In *Palko v. Connecticut*, 302 U.S. 319, the court upheld a State's right to authorize an appeal by the prosecution, though resulting in a new trial and conviction of a capital offense; which, it was held, did not impair the accused's "privileges and immunities" as a citizen. The earlier decision in *Kepner v. U.S.*, 195 U.S. 100, denying such recognition to Philippine prosecutors, was treated in such a way as to offer hope that it might eventually be overruled. Discussion of the first-named case may be found in *Mich. L. Rev.*, XXXVII, 103 (E. D. Ransom); *Notre Dame Lawyer*, XIV, 215 (J. Hynes); *Tex. L. Rev.*, XVII, 81 (L. U. Den-

man); *Oreg. L. Rev.* XVIII, 36 (S. R. Darling). On May 31 the Irish Senate passed the "Offenses Against the State Bill" designed to stop activities in Ireland leading to outrages in Britain. Current articles on Penal Law include:

"Pretense and Reality in our Criminal Law," *Oreg. L. Rev.*, XVIII, 134 (M. Radin); "The Falsely Convicted," *St. John's L. Rev.*, XIII, 45 (M. S. Moss); *id.*, "Indemnity to," *Harv. L. Rev.*, LII, 333; "Criminal Attempts," *Dickinson L. Rev.*, XLIII, 211 (W. H. Hichler); "Legislative Crimes," *Minn. L. Rev.*, XXIII, 135 (N. F. Baker); *U. of Pittsburgh L. Rev.*, V, 63 (J. J. Lawler); "Common Law Crimes," 1939 *Wis. L. Rev.*, 300 (F. F. Kaftan).

Books: Hall & Glueck's "Cases on Criminal Law" (1939) purport "to put the substantive criminal law in the entire field of criminology"; "Scottsboro: A Record of a Broken Promise," (1939) reviews a famous case (See 1937 *YEAR BOOK*, 306).

Penology. "Crime and Punishment in Early Maryland," (J. H. U. Press, Baltimore, 1938, R. Semmes); this is one of the two States which retains the whipping post (1938 *YEAR BOOK*, 399). According to the Columbia University Study above cited, larceny in colonial New York was punished by 39 lashes on the bare back, though women were sometimes exempted. "The Pillory, A Medieval Punishment," is discussed in *Rocky Mt. L. Rev.*, XI, 186 (H. V. Hentig); "Connecticut Institutions and Their Improvement," in *Conn. Bar Jnl.*, XIII, 122 (G. C. Erskine). "The Federal Prison System is the world's largest correctional plan," Warden Johnston of Alcatraz told members of the American Bar Association (*Jnl.* XXV, 755) on July 11 at San Francisco, with 20,000 inmates of its various institutions and 36,000 more in others or on probation.

Procedure. Some five columns of titles of articles on this topic appear in the latest *Index to Current Legal Thought*, more than half relating to the new Federal Rules. Among the most important are:

Those by Prof. E. R. Sunderland in *W. Va. L. Quar.*, XLV, 5; *La. L. Rev.*, I, 477; 146 *Boston Bar Bull.*, 10; and *Tenn. L. Rev.*, XV, 737; also in *ib.* 551, 579 (Judge C. E. Clark). Pre-trial procedure is discussed in *Am. Ind. Soc. Jnl.*, XXXIII, 11 (G. C. Sweeney); *Ill. L. Rev.*, XXXIII, 699; *So. Dak. Bar Jnl.*, VII, 18 (R. W. Bogue); *Dicta*, XVI, 215 (O. E. Garwood); *Boston Bar Bull.*, No. 145, p. 9 (J. E. Gilman); *Tenn. L. Rev.*, XV, 605 (E. R. Finch); *Fia L. Jnl.*, XIII, 226 (Wm. Carver); "Deposition-Discovery," *Columbia L. Rev.*, XXXVIII, 1179 (Pike & Willis); *Oklahoma St. Bar Jnl.*, IX, 188 (J. S. Twyford); *Tenn. L. Rev.*, XV, 737 (E. R. Sunderland). Comparative, *Marquette L. Rev.*, XXXIII, 159 (D. K. Hopkinson); *La. L. Rev.*, I, 45 (Flory & McMahon); *U. of Cin. L. Rev.*, XIII, 1; *Brooklyn L. Rev.*, VIII, 188 (A. Rotwein); *Trials, Tenn. L. Rev.*, XV, 570 (W. H. Wicker); *Ind. L. Jnl.*, XIV, 149; *Special Verdicts, Ill. L. Rev.*, XXXIV, 96; *Time Schedule, Mo. Bar Jnl.*, 10, 53.

Adoption of the Federal Rules by the States is urged in *A. B. A. Jnl.*, XXV, 367 (B. C. Gavitt); *ib.* XXIV, 981 (W. D. Mitchell). The Referee system in New York is criticised in recent letters to the *New York Times*. Civil Procedure in Quebec is discussed in *Ind. L. J.*, XIV, 44 (J. E. Ewing).

Proof. Two events of 1939 indicate the growing importance of this subject: (1) Its codification has been undertaken by the American Law Institute, with Prof. E. M. Morgan of Harvard Law School as Reporter, John H. Wigmore of N. W. University as consultant, and a corps of advisers. Completion is planned by 1942. (2) The subject of the Ross Prize Essay contest was announced as "The Extent to which Courts May, under the Rule-making Power, Prescribe Rules of Evidence." See "The Philosophy of Proof," *Los Angeles Bar Bull.* XIV, 108 (F. G. Tyrrell).

The Hearsay Rule and proposed changes therein occasioned much discussion in the reviews. The English Evidence of 1938 which renders admissible "any statement . . . in a document . . . if the maker had personal knowledge . . . and is unavailable as a witness" is discussed in *Harv. L. Rev.* LII, 539; and in *Canadian Bar Rev.* XVII, 302, where S. J. Helman contends that the limitation should not be confined to a document. A "Hearsay Statute" is suggested in *Wis. L. Rev.* (1938), 587 (Terwilliger & Efland); admissibility of medical treatises in *So. Cal. L. Rev.* XII, 424; (M. Freedman); of summaries of voluminous originals, *Mich. L. Rev.* XXXVII, 449 (B. H. Dewey); "Dying Declarations" (Ohio), *U. of Cin. L. Rev.*, XII, 370 (G. A. Warp); "Instructions in Weighing Hearsay," *Los Angeles Bar Ass'n Bull.* XIV, 270.

Scientific Evidence. See *St. John's L. Rev.*, XIII, 328 (H. Peller). Blood Tests were ordered for the first time in the District of Columbia on October 2 at the instance of defendant in *Beach v. Beach*, a suit for maintenance of a child whose paternity the husband denied. Legal attitudes toward such tests are discussed in *Duke Bar Ass'n Jnl.*, VII, 1 (Bogue & Moose); cf. *Fla. L. Jnl.*, XII, 251; *U. of Cin. L. Rev.* XIII, 446; *Marquette L. Rev.* XXIII, 126; for intoxication, *Id. L. Rev.*, XXIV, 191.

Fingerprints at the Federal Bureau of Investigation had reached 11,312,567 by the end of September and were being filed at the rate of 8000 a day; 300,000 army prints were turned over to the Bureau during the year, the aim being to establish a central identification division. Under instructions from the President, the members of the White House staff were fingerprinted. The Gallup poll showed 84 per cent favoring fingerprinting for aliens and 71 per cent favoring it for all. "Fingerprints in Evidence," *Fla. L. Jnl.* XIII, 43.

Lie Detector is discussed in *N. Y. U. L. Quar. Rev.* XVI, 202 (M. D. Forkosch); *Chicago-Kent Rev.* XVI, 269 (E. B. Nickel); "The Psychiatrist in Court," *G. W. L. Rev.*, VII, 31 (W. Overholser). New York has discarded as obsolete the Bertillon method of criminal identification in vogue for many years.

CONSTITUTIONAL AND PUBLIC LAW

United States. Interpretation by the Supreme Court of Federal Constitution clauses included:

Article I, 8 (3), (interstate commerce), affords a sufficient basis for the Agricultural Marketing Agreements Act of 1937, which does not unduly delegate legislative authority and Secretary's orders thereunder were upheld in *U. S. v. Royal Cooperative, Inc.* 307 U.S. 533, 59 S. Ct. Rep. 1933; also for the Tobacco Inspection Act of 1935, requiring certification of tobacco offered at designated auctions, *Currin v. Wallace*, 306 U.S. 1; also for Tit. III of the Agricultural Adjustment Act of 1938, penalizing the sale of tobacco in excess of the quota limits (Justice Butler dissenting), *Mulford v. Smith*, 307 U.S. 38, 59 Sup. Ct. Rep. 648. Loading and unloading livestock is a phase of interstate shipment which alone suffices to give the I.C.C. jurisdiction, *Union Stockyard etc. Co. v. U. S.* 84 Adv. Op. 188, 60 Sup. Ct. Rep. 193. In *B. & O. R. Co. v. U. S.* 305 U.S. 507, the court upheld an ICC order to desist from furnishing to certain shippers, at less than cost, storage and other facilities not available to all.

Article I, 10, (obligation of contracts), held not infringed by a New York Statute limiting deficiency judgments in foreclosure to the amount of the debt plus interest, costs, and certain fees. *Honeyman v. Jacobs*, 306 U.S. 530.

Article IV, 1, (interstate comity), held not infringed by a State workmen's compensation act, rendering its remedy exclusive, even as against another State with a

similar statute, *Pac. Employers' Ins. Co. v. Industrial Acc. Commission*, 306 U.S. 493.

Article V, (Amendments), construed in *Coleman v. Miller*, 307 U.S. 433, and *Chandler v. Wise*, 307 U.S. 474, 59 S. Ct. Rep. 972, involving ratification by the Kansas and Kentucky legislatures of the "Child Labor Amendment," after previous rejection and more than a dozen years after submission. The court held that the questions raised by the record were political and not judicial and dismissed both petitions.

Amendment V, (Property). In *Driscoll v. Edison Lt. & Pwr. Co.*, 307 U.S. 104, the court upheld the valuation fixed by the Pa. Public Utility Commission, *Frankfurter J.*, in a concurring opinion, speaks of "the mischievous formula for fixing utility rates in *Smyth v. Ames*, 169 U.S. 41. An injunction to prevent the T.V.A. from engaging in the sale of electric power from its dams was denied in *Tenn. El. Pwr. Co. v. T.V.A.*, 306 U.S. 118. Amendments IX and X were also considered. T.V.A. is discussed in *Oreg. L. Rev.* XVIII, 273 (H. Pinney).

Amendment XIV, 1, (Citizenship). A child born in the United States of naturalized parents does not, merely by their subsequent repatriation, lose its American citizenship (*Perkins v. Elg*, 307 U.S. 325). Deportation is not authorized merely for past membership in the Communist party (*Kessler v. Strecker*, 307 U.S. 22). (McReynolds & Butler JJ's dissenting) Civil liberties held infringed by a municipal ordinance forbidding labor unions to hold meetings and excluding their members from the city's parks and streets (*Hague v. C.I.O.*, 307 U.S. 496). **Amendment XV** (Suffrage) held infringed by an Oklahoma statute exempting from registration those electors who had voted under the "grandfather clause," and requiring all others to register within a 12-day period (*Lane v. Wilson*, 307 U.S. 268).

Three of the original thirteen States (Massachusetts, Georgia, and Connecticut) waited until 1939 to ratify the "Federal Bill of Rights," (Amendments I-X), which meanwhile have been in force through their ratification by the other States, with most of the guarantees embodied in the State constitutions.

Reorganization of the Federal Government's 146 departmental bureaus and 48 independent agencies was made possible by the Act of Congress of Apr. 3, 1939 (Public Acts No. 19). Utilizing its provisions, the President, on April 25, sent to Congress *Plan No. 1*, creating three new agencies, viz. (1) *Federal Security*, (q.v.); (2) *Federal Works*, (q.v.); (3) *Federal Loan Agency*, (q.v.). Shifts of other units were made in the same order as follows: To Department of Agriculture, Farm Credit Administration, Federal Farm Mortgage Corporation, Community Credit Corporation. To the Executive, Budget Bureau and Central Statistical Board.

Plan No. 2, sent to Congress on May 9, created no new agencies but shifted the foreign activities of the Commerce and Agriculture Departments to the State Department; the Bureau of Insular affairs as a section of the Territorial Division, and Fisheries and Biological Survey to the Interior Department (which also continues the functions of the Bituminous Coal Commission, disappearing as a separate entity); the Inland Waterways Corporation to Commerce, and the Rural Electrification Administration to Agriculture. In contrast to the Act providing therefor, these Plans encountered little opposition in Congress, which even advanced the date of their effectiveness to July 1. Other shifts are promised later.

Merit System Extended. Executive Order No. 7916, June 24, 1938 (1938 YEAR BOOK, 447) was suspended on January 31, so far only as it applied to Class VI of the Federal Civil Service (Professional and Scientific), and a committee of distinguished members, with Supreme Court Justice Reed as Chairman, was appointed to investigate and report as to what, if any, modifications of the Order might be advisable for that Class. Aided by a subcommittee of government

experts, it conducted public hearings, commencing on November 3.

"The Controller General," by Prof. H. C. Mansfield of Yale, is an argument for separating auditing from control and is critical of the late McCarl administration. The Littauer Center of the Harvard Graduate School of Public Administration, at Cambridge, Mass., was dedicated on May 8. Besides President Conant and Dean Williams, Governor Saltonstall and others spoke. The school, which had been several months in temporary quarters, offers advanced graduate training, through research, seminars, and experienced consultants, to young government employees "with a distinguished record of University graduate study in the social sciences."

Territories. On March 24 President Martinez Nadal of the Puerto Rican Senate, launched a bitter attack before that body upon the Federal Government's policy toward that island. "The Chief of the Interior Department's Territorial Division" (Gruening), he declared, "really rules in Puerto Rico and our nominal governors must cable there for orders." Dr. Gruening was later appointed Governor of Alaska. On May 16 the Puerto Rican Senate adopted a resolution thanking President Roosevelt for creating a military department there, but also expressing hope for statehood. The U.S. Senate Committee Hawaii, recommended against statehood at present for that territory.

British Commonwealth and Empire. "The Constitutions of All Countries," (London, 1938), is a much needed work. Vol. i (just published) relates to the British Empire; vol. ii will contain continental instruments.

Canada. "The Struggle for the Recognition of Dominion Autonomy," *Am. J. of Int. L.*, XXXIII, 747 (L. H. Laing), is based mainly on Sir Robert Borden's Memoirs (N. Y., 1938), but traces the movement beyond the Statute of Westminster (1931). On May 20, Queen Elizabeth participated in the cornerstone ceremonies for the new Supreme Court building in Ottawa and delivered an address comparing the two legal systems (Civil and Common) prevailing in Canada.

Dominica, previously under Leeward Islands administration, became a separate colony on Jan. 1, 1940, pursuant to an Order in Council.

India. Two of the seven independence party provincial cabinets resigned in protest of the British Governors' veto of the immediate release of all political prisoners. Gandhi favors another civil disobedience campaign but without violence.

New Zealand. Applying the maxim that delegated power cannot be delegated, Justice Callan of the Supreme Court held invalid, on May 22, that feature of the Socialist Government's trade control plan which enabled the Governor General, besides issuing regulations, to authorize others to do so.

PRIVATE LAW

Contracts are treated in current articles as follows:

"Rationale of Agreement," *Ky. L. J.*, XXVII, 284 (H. E. Willis); "Rationale of Bargain Consideration," *Georgetown L. J.*, XXVII, 414 (*id.*); "Nature of Consideration," *Brooklyn L. Rev.*, VIII, 303 (R. E. Ireton); "Interpretation," *U. of Chicago L. Rev.*, VI, 374 (M. Greene); "In Modern European Law," *Tulane L. Rev.*, XIII, 592 (R. R. Kuhlwein); "Offer and Acceptance," *Yale L. J.*, XLVIII, 1, 799 (K. N. Llewellyn); *Minn. L. Rev.*, XXIII, 776 (E. S. Stimson); In Louisiana, *L. Rev.*, I, 182 (R. A. Pascal); "Mutuality," *Mo.*

L. Rev., IV, 306 (O. W. Watkins); *Tulane L. Rev.*, XIII, 362 (H. A. Holstein); "Beneficiary Contracts," In California, *L. Rev.*, XXVII, 497 (S. I. Langmaid); In Illinois, *U. of Chicago L. Rev.*, VI, 473; In Michigan, *Detroit L. Rev.*, VIII, 1; In Pennsylvania, *Temple U. L. Quar.*, XIII, 118 (W. W. Holmes), Misc., "Cardozo and the Law of Contracts," (A. L. Corbin), *Harv. L. Rev.*, LII, 408; *Yale L. J.*, XLVIII, 426; *Columbia L. Rev.*, XXXIX, 56; "Legislative Contracts," *U. of Cincinnati L. Rev.*, XIII, 479 (D. L. Ziegel).

Insurance. State regulation was the subject of many articles. Among them were:

Tex. L. Rev., XVII, 182 (R. B. Cousins, Jr.); *Georgetown L. J.*, XXVII, 1051 (Mathias & Robison); *Ky. L. J.*, XXVII, 462; Massachusetts, Life Insurance Law, *Boston U. L. Rev.*, XIX, 53, 244 (H. J. Taylor); Illinois Insurance Code, *Jno. Marshall L. Quar.*, IV, 146 (H. S. Moser). Other topics were: "Insurable Interest in Lives," *ib.*, 405 (A. M. Lewis); "Suicide in Presumption Against," *W. Va. L. Quar.*, XLV, 167 (H. G. Williamson); "Public Policy re Suicide," *Georgetown L. J.*, XXVI, 36, (Cramer & Rubin); "Incontestability," *W. Va. L. Quar.*, XLIV, 390, (E. H. Brohn).

Mortgages and Pledges. "Antichresis: an Ancient Device Retained," *Tulane L. Rev.*, XIII, 131 (L. Oppenheim); "Chattel Mortgage in Louisiana," *ib.*, 19, 234 (H. S. Daggett); "The Proposed Uniform Mortgage Act," *Law & Contemporary Problems*, V, 564 (H. L. Reeve); "Assumption by Grantee," *St. John's L. Rev.*, XIII, 215 (P. M. Lorber); In Virginia, *L. Rev.*, XXV, 993 (P. J. Hartman); "Strict Foreclosure," In Virginia *L. Rev.*, XXV, 947 (D. R. Owen); By Power of Sale, *Mo. L. Rev.*, IV, 186 (G. W. Wise); *Cal. L. Rev.*, XXVII, 66 (D. B. White).

Negotiable Instruments. "Policy or Function of the Law of," *U. of Pa. L. Rev.*, LXXXVII, 662, 793 (J. S. Strahorn); "Negotiability of Goods Documents," *Dickinson L. Rev.*, XLIII, 224 (J. P. McKeenan); "Uniform Negotiable Instruments Law, sec. 40" (In Ill.), *Jno. Marshall L. Quar.*, IV, 401 (J. B. Lampe).

Sales. Current articles relating to this branch include:

In Louisiana, *La. Rev. I*, 800 (W. T. Pegues); Conditional, at Common Law, etc., *Va. L. Rev.*, XXV, 559 (G. Glenn); Uniform Legislation, re, *Cornell L. Quar.*, XXIV, 394 (R. N. Kleps); "Across Sales on Horseback," *Harv. L. Rev.*, LII, 725 (K. N. Llewellyn); "The First Struggle to Unhorse," *ib.*, 873 (*id.*); "Passage of Title Under Co-operative Marketing Acts," *Org. L. Rev.*, XVIII, 157 (A. A. Goldsmith). Of Securities (Under Act of 1933), "Exempt Transactions," *Washington U. L. Quar.*, XXIV, 383 (B. Susman); *Boston U. L. Rev.*, XVIII, 613 (G. D. Bleicken); "Scope of Registration, etc.," *Los Angeles Bar Bull.*, XIV, 80 (H. A. Judy); "Further Developments in 'Disclosure,'" *Ill. L. Rev.*, XXXIII, 145 (B. MacChesney); "Withdrawal of Registration Statement," *Mich. L. Rev.*, XXXVII, 1276 (F. C. Newman); "Materiality," *ib.*, 452 (B. H. Lebeis). Under the Act of 1934, "Unlisted Trading Privileges," *ib.*, 98 (M. L. Plant); "The Maloney Act," *Yale L. J.*, XLVIII, 633; *Georgetown L. J.*, 633 (W. S. Brown); "Accounting and Auditing," *Ill. L. Rev.*, XXXIII, 820; *Mich. L. Rev.*, XXXVII, 288 (P. R. Trigg).

Bankruptcy. The Chandler Act (1938 YEAR Book, 399) is the subject of many articles listed in *Current Legal Thought Index*. Others are: "Acts of Bankruptcy—A Medieval Concept," *Harv. L. Rev.*, LII, 189 (I. Treiman); "The Bankrupt Under New Rules," *Commercial L. Jnl.*, XLIV, 140 (H. U. Feibelman). A stockholder of a bankrupt corporation who seeks full priority against its assets must show a reasonably equivalent contribution in money or money's worth (*Case v. Lumber Co.* 308 U.S. 106, 84 Adv. Op. 22. Cf. *Pepper v. Litton*, U.S., 84 Adv. Op., 160).

Corporations. A connection between this topic and the preceding one is illustrated by an edi-

torial in *U. of Chicago L. Rev.* VI, 467 on "Corporations Amenable to the New Bankruptcy Act." Other articles are:

"New York Corporation History," *State Bar Ass'n. Jnl.*, X, 129 (W. D. O'Brien); *ib.* XI, 83 (M. G. Bogue); "The Modern Corporation and the Free Enterprise Theory," *U. of Chicago L. Rev.*, VI, 399; "The Legal Status of Corporate Directors," *Boston U. L. Rev.*, XIX, 12 (R. E. Uhlman); "Reports to Stockholders and the S.E.C.," *Yale L. Jnl.*, XLVIII, 935 (Kaplan & Reaugh); "When Dividends Vest," *Georgetown L. Jnl.*, XXVII, 74 (R. F. Graham); "Federal Incorporation," *Tulane L. Rev.*, XIII, 214 (J. J. Robbins); "Regulation of Proxies," *Ill. L. Rev.*, XXXIII, 914; *St. John's L. Rev.*, XIII, 297; *Georgetown L. J.*, XXVII, 109 (W. S. Brown); *Minn. L. Rev.*, XXIII, 710 (E. G. Jennings); "Illinois Business Corporation Act," *Ino. Marshall L. Quar.*, IV, 106 (A. E. Wilson).

The S.E.C. released the first of a new series of analyses of 25 corporate reorganizations during the first six months of the Chandler Act (*supra*) showing a book value of \$399,013,032 in all but one, as against a total indebtedness of \$222,584,895. On September 29 the S.E.C. released another of its Reports on "American Listed Corporations" (1938 YEAR BOOK, 399), this one on manufacturers of industrial machinery. The same agency is reported as planning to complete soon the integration of electric utility systems under the act of Congress of 1935.

Delicts (Torts) are discussed in current legal periodicals as follows: "Cardozo and the Law of Torts" (W. A. Seavey), *Harv. L. Rev.* LII, 372; *Yale L. Jnl.* XLVIII, 390; *Columbia L. Rev.* XXXIX, 20; "A New Tort (Mental Suffering Intentionally Caused)," *Mich. L. Rev.* XXXVII, 874 (W. L. Prosser); "Joint Torts and Several Liability," *Tex. L. Rev.*, XVII, 399 (R. D. Jackson); "Restatement," *N. Y. U. L. Quar. Rev.*, XVII, 1 (P. H. Winfield).

Defamation. "The English Law of, and Reform," *Ill. L. Rev.* XXXIII, 669 (G. W. Paton); "Damages" (In New Jersey), *U. of Newark L. Rev.*, III, 182 (A. Teich); "Retaliatory Insult," *Miss. L. Jnl.*, XI, 333 (W. S. Malone); "Fair Comment," *Notre Dame Lawyer*, XIV, 270 (J. L. C. Ford); "By Radio," *Air L. Rev.* IX, 328 (McDonald & Grimshaw); "By Testament," *Georgetown L. J.* XXVII, 478 (J. P. McCartney).

Misrepresentation. "The Ambit of Responsibility," *Tex. L. Rev.* XVII, 1 (W. P. Keeton); "In Accounting Practice," *N. Y. U. L. Quar.*, XVI, 436. Cf. *St. John's L. Rev.*, XIII, 310 (R. A. Klein).

Negligence. "Comparative," In Mississippi, *L. Jnl.* XL, 321 (G. H. Butler); In Wisconsin, *L. Rev.* (1939) 427 (G. Lamboley); "Proximate Cause," *U. of Chicago L. Rev.*, VI, 36 (C. O. Gregory); In Texas, *L. Rev.* XVII, 193 (T. T. Hutcheson); "Duty to Know," *Minn. L. Rev.*, XXIII, 638; "Rights of Licensees, etc.," *ib.* 502; "Effect of *Erie R. Co. v. Tompkins*," *U. of Newark L. Rev.* 85; "Contributory," In Pennsylvania, *Bar Ass'n. Quar.*, XXXVIII, 64 (L. H. Eldredge); In Virginia, *L. Rev.* XXV, 743 (J. M. Wilson, Jr.) Cf. *ib.* 250; "Last Clear Chance," *Harv. L. Rev.* LII, 1187.

Domestic Relations. Marriage. "An Institution," *L. Soc. Jnl.*, VIII, 501 (H. D. Johnson); "The 'Common Law' (Informal) Marriage," in Ohio, *State U. L. Jnl.*, V, 26, 175 (R. M. Moynihan); in New Jersey (prohibited after Dec. 1, 1939); "The Blood Test Law," in New York, *St. John's L. Rev.* XIII, 199 (L. G. Iasilli). Similar legislation has been enacted in

Arizona, Idaho, Oregon, and Alexandria, Va. (city ordinance). But in Oregon the examination fee is \$10, and applications for licenses fell off nearly two thirds after three months of operation, applicants apparently going to Washington where there is no such fee. A bill to abolish the fee was vetoed by the Oregon Governor because of the burden imposed on the board. A similar situation is reported in Maryland, whose new Marriage Age Law is discussed in *Md. L. Rev.* III, 340. Dr. J. E. Moore of the J. H. U. Medical School calls blood tests "Totalitarian rather than Utopian," unreliable and too late in their application. A youth of 23, under his father's guardianship as a spendthrift, was enjoined temporarily, at the latter's instance, along with the former's fiancée, on September 27, from intermarrying anywhere in Massachusetts. When the law sanctioning a widow's marriage with her deceased husband's brother was proclaimed in the British South African colony of Basutoland, natives protested to their tribal council, because of probable discrimination in favor of the second marriage children. The council declared the law applicable to Europeans only.

The Nationality of Married Women," by W. E. Waltz (Urbana, 1938) contains "not only an accurate history of U.S. laws . . . but an excellent résumé of (those) of the principal foreign states." *Am. J. of Int. L.*, XXXIII, 816).

Annulment of a marriage contracted in 1912, by Enrique de Paats, former Argentine Consul, was decreed by the (Catholic) ecclesiastical court of Paris in April, although the Consul had obtained a Mexican divorce in 1937 after an 18 day residence, which later the French Civil Court refused to recognize. From this decree, De Paats, who had meanwhile married another by both religious and civil ceremony, appealed. Annulment in New Jersey is discussed in *Temple U. L. Quar.*, XII, 507 (C. C. Thomas); in Pennsylvania *U. of Pittsburgh L. Rev.* IV, 251 (J. J. Lawler).

Husband and Wife. Obligation of Support, *St. John's L. Rev.* XIII, 105 (R. G. Margles); in Pennsylvania, *U. of Pittsburgh L. Rev.*, V, 145; in Iowa (separate maintenance), *Ia. L. Rev.*, XXIV, 137; "Alienation of Affections" in Louisiana, *L. Rev.* I, 204 (F. H. O'Neal); "Gifts of Chattels and Wife's Rights," *U. of Pittsburgh L. Rev.*, V, 78 (J. N. Sawyer).

Community Property. This is discussed in:

Bibliography, *Wash. L. Rev.*, XIV, 126 (A. S. Beardsley); in Cal., *L. Rev.*, XXVII, 49 (J. R. Johnston); in Washington, *L. Rev.*, XIV, 118 (Early Statutes; C. Hill); as applied to life insurance, *Tex. L. Rev.*, XVII, 121 (I. W. O. Huie); *Wash. L. Rev.*, XVII, 121 (R. V. Hokanson); as affected by mineral rights, *La. L. Rev.*, I, 17 (H. S. Daggett); as regards Federal taxation, *Cal. St. Bar Jnl.*, XIV, 9 (W. H. Nicholas); "Division of Property upon Dissolution," *Law & Contemporary Problems*, VI, 225 (H. S. Daggett); "Reestablishment of Community," *La. L. Rev.*, I, 422 (W. T. Pegues).

Divorce. "The Traffic in Divorce," *Fla. L. Jnl.* XII, 335 (T. Cobb); *ib.* XIII, 13 (M. L. Baker); "Collusion in Divorce," *Commercial L. Jnl.*, XLIV, 18 (N. Phillips); "Stalemate," *Dicta*, XVI, 107 (A. Heincke); *Los Angeles Bar Ass'n. Bull.* XIV, 232 (F. D. Tappan).

The Montana Governor's veto of the "quick divorce" law was upheld on February 24. Ch. J. Rowan-Hamilton, of Bermuda, opening the Hilary Assizes on February 6, stated that divorces obtained by those domiciled in the island

would not be recognized, and recommended divorce legislation for Bermudians.

Alimony. A comprehensive symposium on this subject appears in *Law & Contemporary Problems*, VI, as follows:

Foreword, 183 (J. S. Bradley); "The Historical Background," 197 (Vernier & Hurlbut); "In French Law," 293 (L. M. Mitchell); "In German Law," 301, (Mankiewicz & Fuller); "The Changing Social Setting," 186 (R. W. Kelso); "Judicial Discretion in Awards," 213 (E. W. Cooley); "Grounds for Modification," 236 (E. Desvermeine); "Problems of Enforcement," 274, (E. Pokorny); "Foreign Decrees of," 250, (A. C. Jacobs); "Social and Psychological Effects," 283 (C. G. Peele); "Assignability," *Ky. L. Jnl.*, XXVII, 458 (R. A. Woodall); "Separate Action After Divorce," *La. L. Rev.*, XXIV, 735.

Parent and Child. "Legitimation," *W. Va. L. Quar.* XLV, 370 (A. L. Blair); "Stepchildren, etc.," *Harv. L. Rev.*, LII, 515; "Adoption," in *Louisiana, L. Rev.* I, 196 (J. Bugae); "Agreement to Adopt," *Tex. L. Rev.* XVII, 399 (B. H. Powell).

Guardianship. *Miss. L. Jnl.*, XI, 201 (G. B. Witherspoon); *Mass. L. Quar.* XXIV, 19 (E. E. Clark).

Property. The Institution of Property is discussed in *Temple U. L. Rev.* XIII, 182 (H. Pinney). Other articles were:

"Seisin and Possession as the Basis of Legal Title," *La. L. Rev.*, XXIV, 268 (F. S. Philbrick); "Adverse Possession," *N.Y.U.L. Quar. Rev.*, XVI, 532 (W. F. Walsh); "The Uniform Property Act," *Harv. L. Rev.*, LII, 993; cf. *U. of Cincinnati L. Rev.*, XII, (C. C. White); "Future Interests," (in California), *So. Cal L. Rev.*, XII, 715, 772 (J. McIntyre); (in Illinois) *Chicago-Kent Rev.*, XVI, 213 (E. F. Tynes); "Common Law and Statutory Liens," *Mich. L. Rev.*, XXXVII, 273 (A. P. Boynton); "Amendments to Kansas Real Property Law," *Kan. State Bar Ass'n. Jnl.*, 377 (W. W. Harvey); "Alien Land Rights in Nebraska," *L. Bull.* XVII, 3; "The District of Columbia Real Estate Commission Act," *D. C. Bar Ass'n. Jnl.*, VI, 254 (A. Fisher).

In re Sidebotham 12 Cal. (2d) 434, 85 Pac. (2d) 453, upholds the Real Estate Act of 1937, requiring detailed notice to an official of the owner's intention to offer subdivided lands for sale or lease, reversing the District Court of Appeal and rejecting the claim that the act is class legislation. The long standing suit of *U.S. v. Nor. Pac. R. Co.*, involving a government land grant of nearly 3,000,000 acres, was terminated at Spokane on June 28 by a decree awarding 1,363,000 acres to the government (including 315,000 acres in the Crow reservation) and 1,350,000 to the company, which, according to the government's counsel, had realized \$200,000,000 from sales out of the grant after expending about \$68,000,000 on its railway.

Land Title Transfer. A claim to a "sole and several fishery" in tidal waters was recently upheld by the Chancery Division of the English High Court, upon a record of the inspection of two charters granted by "Lord Henry . . . formerly King of England," before the date of Magna Carta (1215). The manager of Munsey Park, Inc., at Manhasset, L. I., announced its recognition of the Torrens System's (1938 YEAR BOOK, 400) adoption as "inevitable and soon will be demanded by every home buyer." *Yale L. Jnl.* XLVIII, 1125 (McDougal & Brabner-Smith), contains a review and defense of that system in reply to T. R. Powell's "Registration of Title to Land in New York" (1938) *Cf. Cornell L. Quar.*, XXIV, 557 (Fairchild & Springer). A comparison of land and motor vehicle registration appears *ib.* 1238; "The Title Examiner's Burden," *La. L. Rev.* XXIV, 72 (L. L. Forbes); in *Kentucky, L. J.*, XXVII, 194.

Intangibles. "Air Space," *Harv. L. Rev.* LII, 335.

Copyright. See also INTERNATIONAL LAW (PRIVATE). Titles of articles on this topic fill more than three columns of *Current Legal Thought's* latest General Index. Although the Copyright Act of 1909 requires two copies of a work to be "promptly deposited," an author who published, with notice of copyright, on Dec. 10, 1931, but failed to deposit his copies until Feb. 21, 1933, was nevertheless allowed to maintain a suit for damages for infringement before deposit (*Washingtonian Pub. Co., v. Pearson*, 305 U. S. 583, 59 S. Ct. Rep., 397). In *Gibbs v. Buck*, 307 U.S. 66, 59 S. Ct. Rep., the District Court was upheld in enjoining, temporarily, enforcement of a Florida statute prohibiting owners of copyrighted musical compositions from combining to fix fees for use of their materials. State regulation of such copyrights is discussed in *Ill. L. Rev.*, XXXIII, 548 (M. Cohn); *Oreg. L. Rev.* XVIII, 173 (N. Cohen).

Patents. In *Mackey Radio & Tel. Co. v. R.C.A.*, 305 U.S. 58, 59 S. Ct. 427, the Supreme Court upheld the District Court's finding (later reversed by the Court of Appeals) that there had been no infringement of plaintiff's Carter patent by defendant's use of "antennae structures" for radio communication. Complaints of the excessive cost of obtaining patents and of antiquated methods therein led to the announcement on March 18, of a National Advisory Council of Experts to co-operate with Congress. Six measures, all but one of which had passed the House, designed to improve the system were adopted by the Senate on August 1. Current articles include: "Our Patent System," *Fed. Bar Ass'n. Jnl.*, III, 231 (J. W. Macklin); "Restrictions on the Use of Patented Articles," *G. W. L. Rev.*, VII, 657 (A. L. B. Richardson); *Harv. L. Rev.* LII, 308, *ib.* LIII, 145; *U. of Pittsburgh L. Rev.*, V, 247 (J. B. Brown); *Mich. L. Rev.* XXXVII, 1112 (C. E. Brooks).

Succession. See also INTERNATIONAL LAW (PRIVATE). "The Nature of Succession" is discussed in *Fordham L. Rev.* VIII, 151; "The Widow's Election" (from her husband's estate), *Mich. L. Rev.* XXXVII, 236, 401 (E. D. Phelps); *Mo. Bar Jnl.* X, 88 (G. Mohler); *La. L. Jnl.*, XXIV, 714. Applying a recent New York Statute (1939, Ch. 343), Surrogate Wingate of Brooklyn ordered the assets of a deceased German Jew's estate impounded for the benefit of his family who were said to have fled Germany; it was feared the German government would confiscate the fund if sent there. (*In re Weidberg*, N. Y. Times, Oct. 31, 1939). The Basuto (South Africa) tribal council has enacted a rule giving priority in succession to the elder widow, where a father and his minor son die simultaneously.

Testaments (Wills): Capacity. *Oreg. L. Rev.* XXVII, 45 (Wm. Lubersky); *Ky. L. Jnl.*, XXVII, 224 (P. L. Hall); "Irregularities of," *ib.*, 241.

Form. *In re Zaia*, 279 N. Y. 515 upheld the nuncupative (oral) will of a soldier, consisting of a remark, substantiated by two comrades, "If anything happens to me, my sister gets my property." The testament of Pope Pius XI was written on a few loose sheets and a number of cards; most of his belongings were left to the Holy See and, therefore, to his successor; but certain bequests of specific objects were made to the Vati-

can Library, the Christian Museum, etc. Joint and Mutual Wills (Ia.) are discussed in *Ia. L. Rev.* XXIV, 15 (H. J. Te Paske); "Attestation," *Ky. L. J.*, XXVII, 447 (S. W. White).

Interpretation, Mich. L. Rev., XXXVII, 630 (D. Hodgman); *A. B. A. Jnl.* XXV, 85 (R. R. Powell); *Per Stirpes or Per Capita, U. of Cincinnati L. Rev.*, XIII, 298 (C. C. White).

C. SUMNER LOBINGIER.

LAWRENCE COLLEGE. A coeducational institution in Appleton, Wis., founded in 1847. For the autumn term of 1939, 622 students were enrolled in the college of liberal arts, 82 in the Conservatory of Music, and 51 in the Institute of Paper Chemistry, a graduate school affiliated with the college. There were 55 members on the faculty of the college, 14 on that of the Conservatory, and 48 on that of the Institute. The endowment, exclusive of buildings and equipment, amounted to \$1,525,800; the income from endowments for 1939 was \$51,130. The college library contained 137,820 volumes, and the Institute, 9000 volumes. President, Thomas N. Barrows.

LEAD. Mine production of lead in the United States in 1939 appears to have been greater than in any year since 1930, according to a review in *Engineering and Mining Journal*. It is estimated at 460,000 tons, compared with 328,000 tons in 1938. Missouri, Utah, and Idaho were, as usual, the principal sources. Toward the end of 1939 most of the larger lead mining districts were operating at full capacity.

Domestic shipments of lead in 1939 were about 560,000 tons, compared with 422,000 tons in 1938. The increase was due principally to larger consumption in storage batteries and in pigment manufacture. In September sales reached the high record of 104,000 tons, or more than 2½ times the current output of the mines. As a result of the large demand, stocks of refined lead in the hands of shippers declined about one-half during 1939, opening the year at 116,000 tons and closing with 55,000 tons, only a little more than one month's production.

The domestic price of lead rose during 1939 from 4.75¢ per lb., New York, to 5.50¢. The average price for the year was 5.053¢, compared with 4.739¢ in 1938, and 6.009¢ in 1937.

When the war in Europe began British authorities set the price of lead at £17 5s per long ton, but on December 18 the British Ministry of Supply fixed the price at £25, duty paid, to cover the increased cost of transportation and delivery from Empire sources.

War in Europe had little effect on the domestic lead industry, except to cause consumers to accumulate large stocks in anticipation of a rise in price. The United States no longer holds the dominant position in World production that it held in 1914. At that time the domestic output was about 40 per cent of the world total, whereas in 1939 it was only about 25 per cent. British Empire sources have accounted for the change as a result of new developments in Canada, Australia, and Burma. Mexican production also has greatly increased in the last 25 years. Consequently the lead industry of the United States finds its market almost wholly at home, and domestic requirements govern the course of the home market.

Scrap lead is an unusually important factor in the domestic industry. Old battery plates alone accounted for the recovery of about 200,000 tons of lead in 1939.

The principal uses of lead in order of importance are: storage batteries, paints and pigments, alloys, and cable covering. See METALLURGY.

H. C. PARMELEE.

LEAGUE OF NATIONS. Political Activities. On January 16, the League Council met at Geneva for its 104th session among what were called "the most unfavorable world conditions that have yet existed," the Munich conference of 1938 being considered the most serious setback the League ever had. The agenda were mainly non-political, like Narcotics Control, Transit and Communications, Fiscal Affairs, Intellectual Co-operation. The only political questions were the withdrawal of non-Spanish combatants from Republican Spain and the appeal of China for arms and credits. The session opened with a speech by Council President Ricard J. Sandler of Sweden in memory of Emil Vandervelde.

The committee on Spanish volunteers reported 12,673 volunteers fighting in Republican Spain, none of whom were any longer in combatant units. At the time of the report 4640 men (representing twelve nations) had left Spain, and this number would soon be increased to 6490. The report of William J. Jordan (New Zealand) of the Health Committee on sending anti-cholera vaccine to China was received. Dr. V. K. Wellington Koo of China asked for economic sanctions against Japan; a recommendation to member states to extend financial and economic assistance; assurance of facilities for transportation of war materials to China, and the appointment of a co-ordination committee to supervise the application of sanctions. Julio Alvarez de Vayo of Loyalist Spain described bombings of civilians by Franco and placed the responsibility on the Italian "Legionary Air Force." This followed a report of the British commission on bombings in five air raids since the last Assembly session. Russia and China favored action on this report but the Council after noncommittal statements by France and Britain deferred discussion.

There was discussion in a secret meeting of China's demands against Japan, which were backed by Russia, opposed by France and Great Britain. A committee was appointed to decide whether the Danzig constitution had been violated and to report in May, the Danzig High Commissioner to continue on leave of absence. An evasive resolution was adopted on Spain, condemning bombardment of open towns and "the recourse to methods contrary to the conscience of mankind and the principles of international law." The Chinese resolution as adopted invited members to examine in consultation with other powers the statements of the Chinese representative. On the submission of a draft report making suggestions for aiding Spanish refugees, British and French representatives said the most practical course was to assist private organizations in the field.

In February, Switzerland warned the League that in case of war it might be required to leave Geneva on twenty-four hours notice; the Netherlands government announced that it would not allow free passage across its soil of troops acting against an aggressor under Article XVI of the Covenant; Great Britain and France notified the League that their adherence to the General Arbitration Act (complementing the Kellogg pact) would not apply after August 16 to any disputes



Wide World

LEAGUE OF NATIONS OUSTS RUSSIA

General view of League Assembly, which convened at Geneva Dec. 11, 1939, to consider the Soviet invasion of Finland and "dropped" the Soviet Union from membership on December 14



Brown Brothers

THE OSLO POWERS PEACE BID

Convening in Brussels, Belgium, at the call of King Leopold, Foreign Ministers of seven small neutral powers issued an unsuccessful appeal for European peace on Aug. 23, 1939. The delegates, left to right, are: Joseph Bech, Luxemburg, Hubert Pierlot, Belgium; Rickard J. Sandler, Sweden; Halvdan Koht, Norway; Peter Munch, Denmark; Elias Erkko, Finland, and E. N. Van Kleffens, The Netherlands. They also considered mutual defense plans

EUROPE



Wide World

GEORGE TATARESCU
Premier of Rumania, appointed Nov. 24, 1939



Brown Brothers

COUNT PAUL TELEKI
Premier of Hungary, appointed Feb. 17, 1939



Wide World

HUBERT PIERLOT
Premier of Belgium, appointed Feb. 21, 1939



Wide World

DRAGISHA CVETKOVICH
Premier of Yugoslavia, appointed Feb. 6, 1939

EUROPEAN POLITICAL FIGURES

arising from any war they might be involved in.

On April 8, Peru announced its withdrawal from the League, the tenth Latin-American nation to leave, withdrawals of Guatemala, Brazil, Costa Rica, Paraguay, Nicaragua, and Honduras, being already effective, that of El Salvador becoming effective in August and those of Chile and Venezuela in 1940. On April 11, Hungary announced its withdrawal effective at the end of the regular two-year period. Foreign Minister Count Stephen Csaky explained the step on the ground that Geneva had become a center of anti-totalitarian ideology and that Hungary needed to preserve freedom of action.

On May 22, at the 105th meeting of the League Council, a letter from King Zog of Albania protesting against Italy's seizure of Albania was referred to the next Assembly meeting. Dr. Koo again asked help for China and action against Japanese bombings of civilians. Lord Halifax of Great Britain expressed sympathy but doubted the effectiveness of any suggested measures. Eduard Beneš appealed to the League to take action against Germany's seizure of Czecho-Slovakia. Ivan Maisky, Russian Ambassador to London, was appointed Russian representative following Maxim Litvinoff's resignation as Russian Commissar for Foreign Affairs. The Council adjourned on May 27, taking no action on the proposed fortification of Åland Islands. The resolution on China expressed "concern," sympathy, and the desirability of helping. Nations with diplomatic representatives in China were asked to report on bombings.

The League Mandates Commission met on June 8 for its 36th session. Chaim Weizmann, President of the Jewish Agency for Palestine, attacked Britain's new Palestine policy as a "triumph of force over moderation." Three days were given to the study of the Palestine situation. Malcolm MacDonald, British Colonial Secretary, defended British policy as leading to an independent state in which Jews and Arabs can live together. French cession of Hatay (part of the Syria mandate) to Turkey was criticized as violating the terms of the mandate, and was defended by France as in the interest of world peace. The Commission examined reports from South-West Africa, Palestine and Trans-Jordan, Syria and Lebanon, Nauru, and New Guinea. The report of the Commission, published in August, found the British White Paper on Palestine not in accord with the Commission's interpretation of the convention. But the members disagreed as to whether a new interpretation might be possible. Zionist leaders called it "moral victory." The British reply published at the time expressed the belief that the Commission failed to take political factors into account. The British Government announced that it would go ahead with its plan. The August World Zionist Conference hailed the report, and asked the League Council to reject the British plan.

On September 11, France officially informed the League: "A state of war exists between France and Germany as from 5 p.m. September 3." Reasons set forth included German violation of the Kellogg pact.

German Chancellor Hitler in his Reichstag speech, October 6, said it had been planned that the League would revise faulty provisions of the Versailles Treaty; but with America out and others leaving, "the League degenerated more and more into a clique of parties interested in the

Versailles dictates." So "the League of Nations is not a living, but already a dead thing."

On November 21, Great Britain notified the League of the suspension of London Naval treaty of 1936 and the naval agreements with Russia of 1937, and with Poland of 1938.

The meetings of the Council and Assembly which had been set for September and then indefinitely postponed because of the outbreak of war, were held in December as a result of the Russo-Finnish situation. League Secretary Gen. J. A. C. Avenol called the Council to meet December 9. Assembly President Eamon de Valera, upon notice from Mr. Avenol, called the Assembly to meet December 11. Both meetings were called at the request of Finland to consider Finland's demand that Russia be named as an aggressor nation and that League machinery be set in motion to take necessary measures to check the aggression. A few days before the meetings Argentina, Uruguay, Bolivia, and Colombia demanded the expulsion of Russia under Article XVI of the League Covenant which provides that any League member guilty of violation of engagements under the Covenant may be excluded by unanimous vote of the other members of the Council. The joint Latin-American action suggested that the remaining Latin-American members might withdraw from the League, these being: Argentina, Uruguay, Bolivia, Colombia, Cuba, the Dominican Republic, Ecuador, Haiti, Mexico, Panama, Peru. On the meeting of the Assembly Carl J. Hambro of Norway was elected President. Russia refused to attend the Council sessions and denied the authority of the Finnish note to the League, saying that the "new Democratic" government of Finland had asked military assistance. Finland notified the League that it was fortifying the Åland Islands. Finland explained that it did not ask for the imposition of sanctions but did want the League to help settle the dispute with Russia. The League asked Russia to cease hostilities and to agree to peace negotiations through the League. Russia refused. Therefore on December 13, the committee of thirteen branded Russia as an aggressor against Finland and asked League members to extend all aid in their power to Finland, and authorized consultation with non-member states. The next day Council and Assembly decided that Russia by its own act "had placed itself outside the League of Nations and is no longer a member." This action was historic, being the first expulsion of a League member.

The League Secretariat, on orders from the Assembly, then planned technical assistance to Finland. Military, financial and medical experts were appointed. Many League members stated readiness to help, the League's job being co-ordination and organization. To quote a League official at Geneva, "all the assistance the League can assemble will be placed at Finland's disposal." Before the end of the year eight nations replied to the League note, including Union of South Africa, which released her own war planes to Finland. In general, the nations said they would help all they could. The United States informed the League that although as a non-member nation it could not co-operate with the League, assistance would be given independently to Finland.

Membership and Budgets. Due to withdrawals of members and Russia's expulsion at the end of the year the League was forced to cut its budget drastically during the year, with conse-

quent staff reductions. Between Jan. 1, 1938, and May, 1939, when Spain retired from the League, though retaining World Court membership, sixteen countries had withdrawn or given notice of withdrawal. Thirteen had actually withdrawn. In May it was announced that eighty-nine secretariat posts had been eliminated with an annual saving of 1,415,000 Swiss francs. In September the League cut its staff 80 per cent for the duration of the war, but announced it would remain at Geneva—despite rumors of moving to France—with a Swiss government official to be present at League headquarters to guard against any violation of Swiss neutrality. In October, Poland moved to re-establish its membership in the League. In November it was voted that the League 1940 budget, one-third less than that of 1939, included no provision for salary payment because Russia had contributed \$500,000 or more than one-tenth of the League budget for the preceding year. At the end of the year there were nominally 53 members, but only 42 holding active membership.

Relations with the United States. In February Leland Harrison, United States Minister to Switzerland, delivered a note from the Secretary of State of the United States promising co-operation in the League's technical and non-political activities and praising those activities. The United States sent delegates to the meeting of the ILO in Geneva in June and the Havana Regional Labor Conference in November. H. J. Anslinger, head of the U.S. Bureau of Narcotics, took a prominent part in the meeting of the League Committee on Drugs Traffic in June. A representative of the United States was present at the meeting of the League Committee on Social Questions at Geneva in June.

A notable event was the participation of the League in the New York World's Fair; a pentagonal building 100 feet high containing elaborate exhibits of various phases of the League's work, particularly the non-political activities, was visited by more than a million people. On October 21, League of Nations Day at the Fair, it was announced that the League Exhibit would remain at the Fair in 1940, the necessary funds being raised by a group of Americans.

Miscellaneous Activities. On March 30, priceless Spanish art treasures which had been in the custody of the League during the Spanish Civil War were turned over to a representative of the victorious Franco government. In June, the League turned over to the German Consul a Turkish tapestry presented by Austria which had been removed from the wall on the protest of Turkey on the ground that it pictured a Turkish defeat.

On May 10, Turkey ratified the 1936 convention for the suppression of illicit traffic in drugs. This being the tenth ratification, the convention became effective. Dr. Melville MacKenzie, of the League Health Service, reported increase of disease in China, and stated that the League had sent tons of chloride of lime to disinfect wells in cholera regions, also smallpox vaccines, quinine, and thirty field bacteriological laboratories. The League Advisory Committee on Traffic in Opium and Other Dangerous Drugs discussed drug addiction at its June meeting. (See NARCOTICS CONTROL.)

In June the London Loans Committee representing \$400,000,000 of League loans to Danzig, Hungary, Greece, and Bulgaria criticized Danzig

for suspension of loan service and Greece for failure to conclude a proposed settlement.

A committee of seven, appointed by the Council in May, with Stanley Bruce of Australia as Chairman, reported on measures for expansion of the League's non-political work and co-operation therewith on the part of non-member states. It recommended the setting up of a new central committee for economic and social questions. No action was taken on this report during the year.

The Advisory Committee on Social Questions met in June, Elsa Castendyck representing the United States. It continued its study of the legal position of illegitimate children. The League's Child Welfare Information Center has been gathering material on Child Welfare Work in various countries.

The Communications and Transit Organization held its 22nd meeting in Geneva in June. It has been concerned chiefly with co-ordination of highway, rail and air transport and with cost of transport, particularly of food.

See INTERNATIONAL LABOR ORGANIZATION; LABOR CONDITIONS; INTERGOVERNMENTAL REFUGEE COMMITTEE; REFUGEES.

B. P. ADAMS.

LEARNED SOCIETIES, AMERICAN COUNCIL OF. A Federation organized in 1919 and incorporated in 1924 for the purpose of (1) advancing the interests of the humanistic sciences in America, especially by encouraging, initiating, and promoting research in those studies, and by maintaining and strengthening the relations between the national societies devoted to them, and (2) serving as an agency for the conduct of continued relations between its constituent societies and other American organizations of scholars, on the one hand, and academies and analogous bodies in foreign countries, on the other, through its membership in the International Union of Academies (UAI).

The Council consists of two delegates from each of the following constituent societies: American Philosophical Society, American Academy of Arts and Sciences, American Antiquarian Society, American Oriental Society, American Numismatic Society, American Philological Association, Archaeological Institute of America (q.v.), Society of Biblical Literature and Exegesis, Modern Language Association of America (q.v.), American Historical Association (q.v.), American Economic Association (q.v.), American Philosophical Association, American Anthropological Association, American Political Science Association, Bibliographical Society of America, American Sociological Society, American Society of International Law, History of Science Society, Linguistic Society of America, and the Mediaeval Academy of America.

The Council maintains a large number of committees devoted to specific fields of study; it awards fellowships and grants in aid of publication. The 20th annual meeting of the Council was held in Washington, D. C., Jan. 27-28, 1939. Two Bulletins of the Council appeared during the year: No. 28, a special number devoted to *Indic Studies in America*, in May and No. 29, the *Proceedings Number*, in July. The receipts of the Council in 1939 amounted to \$290,225; its expenditures were \$175,531.

The officers for the year 1939 were: Chairman, William E. Lingelbach; Vice-chairman, William F. Albright, and secretary-treasurer, H. M.

Lydenber. Headquarters were at 907 Fifteenth Street, Washington, D. C.

LEATHER. The United States still holds its lead by an immense margin in leather manufacture. In 1939 it tanned approximately 25 million cattle hides, 46 million sheep and lamb skins, 45 million goat skins, 16 million calf skins and hundreds of thousands of skins of deer, kangaroos, horses, snakes, sharks, etc. But United States take-off of raw hides and skins is inadequate to meet domestic needs, making it necessary to import large quantities. The United States imports 10 to 15 per cent of its requirements of cattle hides, 20 to 25 per cent of its calf and kip skins, about 95 per cent of its goat and kidskins, and about 50 per cent of its sheep and lamb skins.

War accelerated the leather business in the four closing months of 1939, with greater emphasis on the manufacture of heavier leathers for work, walking, and war shoes. Leather is not only a war essential but a war contraband. In war economics it is actually in third position of importance to foodstuffs and minerals. Rationing and conservation of leather was put in effect in Germany, Russia, and England before the close of 1939. Leather enjoys a world free price level and is one of the few items of human use world priced. This served as a check against price speculation in late 1939.

Much scientific progress was made to speed up the time of tanning in 1939. The process of elastication of leather (only three years old) accounted for the production of 25 million pairs of shoes in 1939. This new method begins with tanning, giving more stretch to the finished leather which is then backed with a latex-thread batiste fabric, thus giving a play or stretch to the leather upper material, of considerable importance in both comfort and style. Printed or plated leather, particularly in an alligator or lizard finish, was another success of the year's tanning. A more flexible and durable coating to patent leather was developed by chemical skills as well as a "whiter" white leather for summer wear. Tanners also added a process of sanitization to lining leather as a deodorant and antiseptic. Practically all of these improvements in 1939 leather-making were of American origin, the rest of the tanning world being under economic pressure and thereby restricted in experimentation.

Leather prices moved within a narrow range for the first eight months of the year, ending that period lower than at the start, as shown by the price of cows (the standard index) at 12 cents per square foot in January and 10½ cents for better quality in August. Upon the invasion of Poland the price of light cows jumped to 14 cents during the first part of September. Speculation pushed the price up to 16½ cents and the year closed at 15 cents. Net gain—plus 3 cents from the year opening but 5 cents from April's low. The industry operated on a hand to mouth basis through the year and was more prudent than in many years, with little maladjustment between production and consumption.

As a result of the sharp upswing in shoe production (to approximately 419 million pairs), the consumption of hides in 1939 was the largest in more than twelve years. About 22,650,000 hides were consumed, a gain of 14 per cent compared with 1938 and slightly above the previous high of 22,628,000 in 1936. A feature of the year was the decline in visible stocks to the lowest level since 1890. At the close of 1939 domestic hide stocks

totalled about 12,500,000 hides, equal to six-months' supply. On Dec. 31, 1938, hide stocks were 14,023,000 hides, equivalent to about nine-months' supply.

JOHN F. W. ANDERSON.

LEBANON, REPUBLIC OF. See SYRIA AND LEBANON.

LEDERER, EMIL. A German economist, died in New York City, May 29, 1939. Born in Pilsen, Aug. 22, 1882, he was educated at the universities of Vienna, Berlin, and Munich, and during 1907-10 was secretary of the Netherland-Austrian Workingmen's Organization in Vienna. He was co-editor of *Archiv für Sozialwissenschaft und Sozialpolitik* after 1910. Appointed an instructor in economics at the University of Heidelberg in 1912, his first important publication was also released in that year under the title, *White Collar Workers in the Modern Economy*. After 1922 he was a visiting professor at Heidelberg and during 1923-25 he was visiting professor at the University of Tokyo. In 1931 he was appointed professor of political science at the University of Berlin.

In 1933, after the rise of the Nazis to power in Germany and their expulsion of scholars from the universities, Dr. Alvin Johnson, director of the New School for Social Research in New York, conceived the idea of the "University in Exile." He invited Dr. Lederer to join him as the first dean of the school, in which capacity he served until 1936. At his death he was professor of economics at the Graduate Faculty of Political and Social Science in the New School for Social Research.

His *Principles of Economic Theory*, published in 1922, aimed to show a synthesis of the psychological theory of the Austrian school of Böhm-Bawerk and the objective theory of Karl Marx. *Japan in Transition* (1938), written with his wife, was a study of Japan, and his *Technical Progress and Unemployment* (1938) was prepared for the International Labor Office. He was a contributor to *The Encyclopedia of the Social Sciences*.

LEE, FREDERIC SCHILLER. An American physiologist, died in Columbia, S. C., Dec. 14, 1939. Born in Canton, N. Y., June 16, 1859, he was educated at St. Lawrence University (A.B., 1878; A.M., 1881; LL.D., 1918); at Johns Hopkins University (Ph.D., 1885), and at the University of Leipzig (1885-86). Upon his return from abroad he joined the faculty of St. Lawrence as an instructor in biology, and in 1887 he transferred to Bryn Mawr College as an instructor and associate in physiology and histology. He remained there until 1891 when he went to Columbia University. Thereafter he was successively demonstrator in physiology (1891-95), adjunct professor (1895-1904), Dalton professor (1904-20), research professor (1920-28), and professor (1928-38) when he retired on June 30. He was also Jesup lecturer at Columbia in 1911 and served on the University Council during 1913-20. In addition, he was Cutter lecturer at Harvard Medical School in 1918 and Parker lecturer at Union Theological Seminary in 1922.

One of the world's leading physiologists, his talents were utilized by the United States Government during the World War. He was consulting physiologist to the U.S. Public Health Service during 1917-19, for which he made a special mission to Europe to investigate industrial conditions in 1918; and served as executive secretary of the committee on industrial fatigue of the

Council of National Defense and as chairman of the committee on fatigue in industrial pursuits of the National Research Council. From 1919 to 1924 he was senior physiologist with the rank of senior surgeon in the reserve corps of the Public Health Service.

Dr. Lee regarded physiology as primarily a biological science and urged its inclusion among scientific courses of universities. His researches dealt particularly with the physiological properties of muscles, the role of parts of the ear in maintaining bodily equilibrium, industrial physiology, and fatigue, and he was an early advocate of an eight-hour working day. He held membership in the leading scientific organizations: fellow of the American Association for the Advancement of Science; president of the Society of Experimental Biology and Medicine (1908-10), of the Harvey Society (1912-14), and of the American Physiological Society (1917-19). Also, he was president of the New York Botanical Garden during 1923-37 and inaugurated many scientific reforms.

An editor and translator of note, he served on the staff of the *American Journal of Physiology* (1898-1914) and the *Columbia University Quarterly* (1900-20). His own publications include: *Fatigue* (1906) and *The Human Machine in the Factory* (1919), both Harvey lectures; *Scientific Features of Modern Medicine* (1911), and *The Human Machine and Industrial Efficiency* (1918).

LEEWARD ISLANDS. A British crown colony in the West Indies which comprised five presidencies: (1) Antigua, with Barbuda and Redonda, (2) St. Christopher (or St. Kitts), with Nevis and Anguilla, (3) Dominica, transferred to WINDWARD ISLANDS (q.v.) on Jan. 1, 1940, (4) Montserrat, and (5) British Virgin Islands, with Sombrero. Total area, 726 square miles; total population (Jan. 1, 1938, estimated), 142,063. Chief towns (with approximate populations): St. John, the capital on Antigua (10,000); Basseterre, on St. Christopher (8000); Roseau, on Dominica (8000); Plymouth, on Montserrat (2000); Charlestown, on Nevis (1200).

Production and Trade. Sugar, cotton, limes and lime products, oranges, grapefruit, bananas, cocoa, and vegetables were the main products of the colony. Trade (1938): Total imports, £733,645; total exports, £576,886 (sugar £376,348, cotton £81,723, molasses £16,955, limes and lime products £26,678). During 1937, 1753 ships aggregating 6,478,040 tons entered and cleared the ports. The total length of the roads in 1938 was 678 miles.

Government. For 1938, total revenue amounted to £337,547; total expenditure, £331,897. On Dec. 31, 1938, the public debt amounted to £354,500 against which the sinking fund (market value) was £49,749. A governor, who heads the government, was represented in the presidencies of Antigua, St. Christopher-Nevis and Dominica by administrators, and in those of Montserrat and British Virgin Islands by commissioners. The whole colony had a federal executive council, and a general legislative council of 20 members (10 official and 10 unofficial). There was an executive and legislative council for each of the presidencies except British Virgin Islands which had an executive council only. Governor and Commander-in-Chief, Sir G. J. Lethem (appointed October, 1935). See DOMINICA; WINDWARD ISLANDS.

LEEWARD ISLANDS, FRENCH. See OCEANIA, FRENCH ESTABLISHMENTS IN.

LEGAL EDUCATION. See LAW.

LEGION OF DECENCY, NATIONAL. An

organization formed by the Roman Catholic Bishops of the United States at their meeting in Washington, D. C., November, 1933 by which they seek to obtain and maintain fundamental moral standards on the screen. The Committee was composed of the Most Rev. John T. McNicholas, O.P., Archbishop of Cincinnati, chairman; the Most Rev. John J. Cantwell, Archbishop of Los Angeles; the Most Rev. Hugh C. Boyle, Bishop of Pittsburgh; the Most Rev. John F. Noll, Bishop of Fort Wayne; and subsequently, the Most Rev. Stephen J. Donahue, Auxiliary Bishop of New York. In April, 1934, the Legion of Decency was formally inaugurated. Every Catholic was asked to take the pledge of the League:

In the Name of the Father and of the Son and of the Holy Ghost, Amen.

I condemn indecent and immoral motion pictures, and those who glorify crime or criminals.

I promise to do all that I can to strengthen public opinion against the production of indecent and immoral films, and to unite with all who protest against them.

I acknowledge my obligation to form a right conscience about pictures that are dangerous to my moral life. As a member of the Legion of Decency, I pledge myself to remain away from them. I promise, further, to stay away altogether from places of amusement which show them as a matter of policy.

Each year, on the Sunday within the octave of December 8, Catholics in the United States are invited to renew this pledge.

In February, 1936, the Bishops' Committee on Motion Pictures transferred the responsibility for the review and classification of motion pictures to the Archdiocese of New York. The Motion Picture Department of the International Federation of Catholic Alumnae, which had been reviewing motion pictures for over a decade and had, over this period, published a list of "Endorsed Motion Pictures," was officially designated as the reviewing and classifying group for the Legion of Decency.

From October, 1938 to November, 1939, the New York office of the National Legion of Decency reviewed 592 feature motion pictures. Of the pictures reviewed, 529 were domestically produced while 63 were produced by foreign companies. The 63 foreign pictures were in six languages. Of the total number of films reviewed, 324 were rated as Class A—Section I—Unobjectionable for General Patronage; 207 were rated as Class A—Section II—Unobjectionable for Adults; 50 were rated as Class B—Objectionable in Part; 9 were rated as Class C—Condemned. Because of the special problems felt to be involved, two films were placed in a category entitled "Separately Classified."

The Rev. John J. McClafferty is executive secretary of the Bishop's Committee on Motion Pictures and is in charge of the New York office at 485 Madison Avenue, which is carrying on the responsibility for the national list of film classifications.

LEGISLATION. See UNITED STATES; articles on the separate States; AUTOMOBILES; BIRTH CONTROL; FIRE PROTECTION; LABOR LEGISLATION; LAW; TAXATION.

LEHIGH UNIVERSITY. A nonsectarian institution for the higher education of men in Bethlehem, Pa., founded in 1866. The university is divided into a college of arts and science, a college of business administration, a college of engineering, and a graduate school with courses leading to the Ph.D. degree. The enrollment for the autumn of 1939 was 1965 classified as 243 arts,

452 business, 1110 engineering, and 160 graduate students. The enrollment for the summer session of 1939 was 666. The faculty numbered 181, including 17 persons on the administrative staff. The endowment amounted to \$7,700,000 and the total income for the year was \$1,163,961. There were 238,000 volumes in the library. During the past year Albert Brodhead bequeathed the University a fund amounting to \$704,000; construction was begun on a new dormitory, named the Henry Sturgis Drinker House and accommodating 130 students; and Mr. E. R. Grace, president of the Board of Trustees, has made provision for a new Recreation Building which will be ready in the autumn of 1940. President, Clement Clarence Williams, B.S., B.S. in C.E., C.E., LL.D., Eng.D.

LENSES. See GLASS; PHOTOGRAPHY.

LEWIS, J (AMES) HAMILTON. An American Senator, died in Washington, D. C., Apr. 9, 1939. Born in Danville, Va., May 18, 1863, he was educated at Houghton College, Ga., the University of Virginia, and studied law in Savannah. Admitted to the bar in 1882 he moved to Washington Territory in 1884, where he began the practice of law. He was elected to the Territorial Senate in 1886, made an unsuccessful bid for the governorship in 1892, and in 1896 was elected congressman-at-large. He was the author of a resolution for the recognition of Cuban independence, and served in the Spanish American War with the rank of colonel; he also saw service in Porto Rico and the Philippines (1898-1900). Upon his return to civil life, he failed of re-election, and was an unsuccessful candidate for senator (1894; 1899) and vice president (1896; 1900). In 1903, President McKinley named him as an aide to the Joint High Commission which settled the Alaskan Boundary Dispute.

Lewis removed to Chicago in that year, and in 1905 became city attorney and corporation counsel, serving until 1907. He was an unsuccessful candidate for Governor of Illinois on the Democratic ticket in 1906, but in 1913 he was elected to the U.S. Senate, holding office until 1919 when he failed of re-election. As Democratic whip, he was a consistent supporter of the President. He represented the Senate in London to execute treaty laws for safety at sea, and in 1918 was a special commissioner of the United States for the War Department and the President and served in France under Generals Pershing and Bell. Subsequently, President Wilson offered him the ambassadorship to Belgium, which he refused.

In 1920, Lewis was a candidate for the vice presidential nomination and also ran for the governorship of Illinois, but was defeated. He retired to the practice of law, and in 1923 represented American interests in the Turkish oil fields and in the following year participated in the negotiation of a \$28,000,000 loan to Mexico. As an opponent of Prohibition Lewis was elected to the Senate in 1931, and was re-elected in 1937 for the term ending in 1943. Again appointed Democratic whip, he was a firm supporter of the Administration except on the St. Lawrence seaway pact with Canada, which he opposed, and on the prepayment of the soldiers bonus, which he advocated. He was a firm believer in "isolationism," and his last speech in the Senate, Jan. 25, 1939, was in opposition to the lifting of the arms embargo on Spain. Senator Lewis was a member of several important Senate committees, including expenditures in executive departments (chair-

man), District of Columbia, foreign relations, military affairs, and rules.

Senator Lewis was the author of *Two Great Republics—Rome and the United States* (1913), and, with A. H. Putney, *Handbook on Elections* (1912), and, with T. C. Spelling, *Treatise on the Law Governing Injunctions* (1926).

LIAONING. See CHINA under *Area and Population*.

LIBERIA. A Negro republic on the west coast of Africa. Area, about 43,000 square miles; population, estimated at from 1,000,000 to 2,500,000. Of the total population, about 60,000, including some 12,000 Afro-Americans, residing mainly along the coast, may be considered civilized. Europeans and Americans in Liberia number about 250. Capital, Monrovia (pop. about 10,000). English is the official language.

Education and Religion. There were in 1938 70 government and 80 mission schools with about 10,000 pupils, besides two colleges at Monrovia (one government and one Methodist) and a Methodist vocational school at Kakata. The indigenous tribes are mainly pagan or Mohammedan, except for some Christian converts. The Afro-Americans are Protestant Christians.

Production. Native coffee, cacao, cotton, piassava fibre, palm oil, palm kernels, kola nuts, rice, oil seeds, iron, copper, and gold are produced in small quantities. The Firestone Rubber Company's 1,000,000-acre concession employed nearly 12,600 natives in 1939; rubber production was 4750 long tons. Rich forest, agricultural, and mineral resources await exploitation.

Foreign Trade. Imports in 1938 totaled \$2,242,000 (\$1,958,000 in 1937); exports, \$1,990,000 (\$2,029,000). Values of the chief exports in 1938 were (in 1000 Liberian dollars): Rubber, 1099; palm kernels, 444; coffee, 192; piassava, 176; gold, 50. Trade was mainly with the United States, United Kingdom, and Germany.

Finance. The 1939 budget called for expenditures of 968,000 Liberian dollars, including \$250,901 for interest and amortization of the public debt. Estimated actual 1938 revenues of \$875,000 produced a surplus of \$68,000. On Aug. 31, 1938, the total debt was \$1,943,794 (external, \$1,632,000). The Liberian dollar was fixed at \$4.80 to the pound sterling in 1937 and 1938.

Communications. There are no railways and only about 180 miles of roads (1939). A bus line on the main road from Monrovia to the interior was established in 1939. The rivers and, in the interior, porters are the chief means of transportation. A French weekly air service connects Monrovia with Dakar, Senegal, and Pointe-Noire, French Equatorial Africa. Vessels entering the ports in 1937 numbered 700, of 1,792,455 gross tons. Radio stations at Kolahun and Tohien in the interior were installed in 1939.

Government. The Constitution is modeled on that of the United States. Suffrage is restricted to Negroes owning land. The True Whig Party, dominated by a small oligarchy of Afro-American families at Monrovia, has controlled all branches of the government since 1878. President in 1939, Edwin Barclay, inaugurated for a second term (of eight years) Jan. 6, 1936.

History. It was announced in Washington, June 17, 1939, that the Liberian and United States governments had exchanged notes granting each other's citizens reciprocal rights to establish and operate air services to their respective territories. The way was thus opened for the future extension

of American air lines to the west coast of Africa. Conforming to its new "pay as you go" policy, the Barclay Government in 1939 met payments on the funded debt regularly and promptly. The Treaty of Friendship, Commerce and Navigation between the United States and Liberia, signed Aug. 8, 1938, went into effect for five years with exchange of ratifications on Nov. 21, 1939. On August 21 a United States-Liberian conciliation treaty was signed at Monrovia.

LIBRARY ASSOCIATION, AMERICAN.

The official organization of librarians in the United States and Canada, founded for the purpose of promoting library service, and librarianship. In 1876 when it was organized its membership was 103, in 1939 it was more than 15,500. The activities of the Association are carried on by its officers; by more than 70 committees and boards, comprising hundreds of voluntary workers, engaged in studying such problems as the extension of library service, library administration, special libraries such as those in hospitals, work with the blind and with the foreign born; and by the members of the headquarters staff, who numbered 75 in 1939.

The Association issues various books and pamphlets for libraries and in the interest of library progress and education generally. Among the 1939 publications: *American Librarianship from a European Angle*, by Wilhelm Münthe, contrasts American and European practices; *The Library of Tomorrow*, ed. by Emily Miller Danton, presents inspirational yet practical views of the library of the future; *Hospital Libraries*, by Edith Kathleen Jones, guides librarians in the operation of hospital library service; *College and University Library Buildings*, by Edna Ruth Hanley, exhibits detailed photographs and floor plans for 42 recent library buildings and offers comments and discussions of essentials; and *Personnel Administration in Public Libraries*, by Clara W. Herbert, discusses the personnel factors involved in developing a high-quality staff which contribute to effective library service. Two books are of particular interest to college and university libraries: *Vitalizing a College Library*, by B. Lamar Johnson, relates how the Stephens College Library was made more valuable to the college and its students; and *Teaching with Books, a Study of College Libraries*, by Harvie Branscomb (published jointly with the Association of American Colleges) reveals the extent to which the efforts of the college library are integrated with those of the institution as a whole. New editions of three important library aids were published during the year: *The Library in the School*, by Lucile F. Fargo, third and enlarged edition of the only basic book in the field; a completely revised second edition of *Basic Reference Books*, by Louis Shores; and a second edition of the *Code for Classifiers*, by William Stetson Merrill. In addition there have been books and pamphlets on subjects such as archives and libraries, and floors and floor coverings, and a variety of book lists.

Four periodicals are also issued by the Association: *Bulletin of the American Library Association*, a monthly which includes the annual reports, the conference proceedings, and the yearly handbook; the *Booklist*, published semi-monthly as a guide to the selection and purchase of current books; the *Subscription Books Bulletin*, a quarterly which presents critical estimates of subscription books and sets sold currently by can-

vassing agents; and the *Journal of Documentary Reproduction*, a quarterly review of the application of photography and allied techniques to library, museum, and archival service.

A new quarterly, entitled *College and Research Libraries*, will be undertaken in 1939-40 for the Association of College and Reference Libraries, a section of the A.L.A.

At the 61st annual conference, held in San Francisco, June 18 to 24, 1939, with about 3000 librarians present from not only the United States and Canada but also the Hawaiian Islands, Venezuela, Brazil, Chile, Colombia, Mexico, Union of South Africa, Costa Rica, Norway, Eire and England, the Association announced four awards.

Dr. Herbert Putnam, librarian emeritus of the Library of Congress received the Joseph W. Lippincott Award of a certificate and \$500 for the "most outstanding contribution to librarianship," i.e., the recent completion of the great Library of Congress Annex. The epigram, written by Sinclair Lewis for the award certificate, which was designed by William A. Kittredge, this year's recipient of the Gold Medal of the American Institute of Graphic Arts, reads: "I doubt if I owe more to any of my teachers, even to such masters as Tinker of Yale, or to any editor or critic than to the several librarians who have shown so joyous a zeal in encouraging me to use their libraries. The keepers of books are the unarmored keepers of civilization." Dr. Louis R. Wilson, dean of the Graduate Library School, University of Chicago, received the James Terry White medal, given for "notable published professional writing" for his book, *The Geography of Reading*.

The second Caldecott medal, awarded for the most distinguished American picture book for children published during the preceding year, was presented by the Section for Library Work with Children and the School Libraries Section of the Association to Thomas Handforth, for his illustrations of *Mei Li*. The sections also presented the eighteenth Newbery Medal, which is awarded for the most distinguished contribution to children's literature published during the preceding year, to Elizabeth Enright for her book, *Thimble Summer*. Frederic G. Melcher, editor, *Publishers' Weekly*, is the donor of these two medals.

During the conference an honorary membership in the Association was conferred on Dr. John H. Finley, editor emeritus of the *New York Times*, who "has worked actively for the betterment of library and educational opportunities"; the "Library's Bill of Rights" was adopted; a resolution was passed requesting that the new low postage rate include all books, indexes, and bibliographies; a statement of policy regarding gifts and bequests to libraries was adopted; and a lacquered casket was received from the Library Association of China in appreciation of some 20,000 volumes sent by American libraries to the war-torn libraries of Chinese Colleges and Universities.

Officers elected for 1939-40 were: President, Ralph Munn, Public Library, Pittsburgh; first vice president and president-elect, Essie M. Culver, State Library Commission, Baton Rouge, La.; second vice president, Donald Coney, University of Texas Library, Austin; and treasurer, Matthew S. Dudgeon, Public Library, Milwaukee, Wis. The 1940 conference will be held in Cin-

cinnati, May 20 to June 1 and the midwinter meeting December 27 to 30, 1939, in Chicago.

During the 1938 midwinter meeting held in Chicago, December 27 to 30, with a record attendance of 862 librarians present, a federal depository library survey was approved; a new microprint process, which would print a 300 page book in a leaflet of three pages, was discussed; a *Code of Ethics for Librarians* was adopted; the *Classification and Pay Plans for Municipal Public Libraries* was approved; the *National Plan for Libraries* was revised; the A.L.A. reorganization plan and the Federal Aid Bill were discussed; President Roosevelt's order reducing the postal rate on books was commended; and the Carnegie Corporation's appropriation of \$10,000 toward support of a program of republication of out-of-print books in demand was acknowledged with appreciation.

LIBRARY ASSOCIATION, THE. An organization of libraries and librarians throughout the British commonwealth of nations, founded in 1877 and incorporated by Royal charter in 1898. Its primary objects are: To unite all persons engaged or interested in library work by holding conferences and meetings for the discussion of bibliographical questions and matters affecting libraries; to promote the better administration of libraries; to promote whatever may tend to the improvement of the position and qualifications of librarians; and to hold examinations in librarianship, and to issue certificates of efficiency. It maintains a professional register of more than 2000 qualified persons, classified as Fellows (F.L.A.) and Associates (A.L.A.); candidates for senior positions in libraries are selected from among those who have been elected to Fellowship or Associateship. The School of Librarianship at the University of London is conducted under the joint auspices of the University and of the Association. Among the Association's publications are: *The Library Association Record*; *The Library Assistant*; *The Library Association Year Book*; *The Year's Work in Librarianship*; and *The Subject Index to Periodicals*. The President elected for 1939 was Mr. Arundell Esdaile, M.A., Litt.D., F.L.A., Secretary of the British Museum. The Secretary is P. S. J. Welsford, F.C.I.S. Headquarters are at Chaucer House, Malet Place, London, W.C. 1, England.

LIBRARY PROGRESS. Continued progress of libraries has been noted during the year with the extension of library facilities to those previously without this service, the furtherance of the project for federal aid to libraries, the development of plans in the state for the use of state aid grants, the enactment of certain state legislation benefiting libraries, the greater coordination of effort among the many groups interested in libraries and the adoption of three important official library pronouncements—the revised *National Plan for Libraries*, the new *Code of Ethics for Librarians*, and the *Library's Bill of Rights*.

There were about three million less people in the United States in 1939 without library service than in 1934. More than 42 million, or 34 per cent of the population, however, are still without this essential educational service. Rural people constitute 91.8 per cent of the people without library service. This is 71.9 per cent of the entire rural population of the United States. Out of over 3000 counties, there are still 897 without a single library as compared with 1000 in 1934.

Only 40 cities of over 10,000 population lack public libraries. Recent statistics indicate that in 1937-38 the book stock of free public libraries in the United States was 106,772,777 volumes, with a circulation of 403,829,386 books. The expenditures by these libraries was \$51,594,137, which equals 42 cents per capita based upon the total population of the United States. Statistics of public libraries by states will be found in the *A.L.A. Bulletin*, July, 1939, for selected groups of public libraries, in the *A.L.A. Bulletin* for April, 1939, and for selected groups of college, university, and high school libraries, in the *A.L.A. Bulletin* for February, 1939. Progress and statistics of Canadian libraries were covered in *The Survey of Libraries in Canada, 1936-38*, issued by the Dominion Bureau of Statistics in 1939, and "Whither Canadian Libraries" (*A.L.A. Bulletin*, July, 1939).

Librarians and friends of libraries again supported in the first session of the 76th Congress the recommendations of President Roosevelt's Advisory Committee on Education (see 1938 YEAR BOOK, *Library Progress*). The bill was recommended for passage in the Senate by the Committee on Education and Labor and was introduced in the House but not considered by the Committee on Education to which it was referred. Both bills retain their present status when Congress reconvenes in January, 1940.

See ROOSEVELT LIBRARY.

State Aid. Several Canadian provinces and a third of the states planned legislative campaigns during the year. British Columbia increased its aid for three regional public libraries from \$1000 to \$5000 and Nova Scotia offers \$1 for every \$3 appropriated by local agencies for regional libraries. Arkansas, Ohio, Pennsylvania, and Vermont made or renewed appropriations for large unit libraries ranging from \$12,500 to \$50,000 a year. A regional experiment will be continued in New Hampshire and two regional libraries in Louisiana still benefit from a 1938 biennial appropriation. In an effort to balance the budget, Michigan repealed the appropriating section of its state aid act of 1937 for a continuing annual state aid fund of \$500,000. The failure of state aid campaigns in several states was because of economy but in spite of this, the trend toward this newer type of state aid appears to be established. Four southern states appropriated funds for the purchase of school library books—Louisiana, \$300,000; Georgia, \$150,000; Virginia, \$100,000; and Tennessee, \$70,000. Funds of the last three are to be matched by local funds. Five states and one province (Alabama, Illinois, Iowa, Tennessee, West Virginia, and Nova Scotia) took legislative action toward providing or strengthening official state leadership. New laws or amendments to older legislation were passed by six states and one province (Alabama, Connecticut, Indiana, Montana, West Virginia, Wisconsin, and Nova Scotia) to permit regional or joint county library service.

Objectives of the A.L.A. Library Extension Board for the coming year are: strengthening the state library agencies; more field work in the weaker states; representation at regional meetings; continued emphasis on state and federal aid; and co-operation with all rural agencies and groups.

Adult Education. An increased interest and activity in adult education among librarians has been noted during the year. Several new readers'

advisory services were established in medium-sized libraries and the large cities are extending this service to branches. Leadership in co-ordinating adult education activities is being undertaken by some libraries, and library schools are conducting institutes and adding courses on adult education services of the library. Definite advisory services are being carried out in public libraries in 64 cities and in 6 college libraries. Immediate objectives of the A.L.A. Adult Education Board are: emphasis on an educational objective in adult service; increasing the number of experiments and demonstrations and the compilation of results; more consideration to qualitative tests of service; emphasis on adult educational training in library schools and among librarians in service; and co-operation and co-ordination with other interested groups in this field. The board has sponsored the publication of several books on the subject and articles in professional periodicals.

Library Training and Personnel. Surveys of library personnel and training agencies, in-service training for librarians, co-operation with library schools and other agencies, and the development of state plans for the education and certification of librarians were included during the year in the activities of the A.L.A. Board of Education for Librarianship. A statement on correspondence courses in library science was published by the board in which it stressed the opinion that such courses do not offer adequate instruction in library service, that the professional education of librarians is not adaptable to correspondence study, and that study in residence should be required of all library school students.

Response from library schools to the individual need for some means of assisting librarians in service to continue professional preparation was particularly noticeable. In addition to the institutes regularly conducted by the Graduate Library School, University of Chicago, eight accredited schools sponsored institutes. Several other institutes were also held. Changes in accredited library schools continued to indicate an effort to meet conditions in the field. Through financial necessity, Hampton Institute Library School, a pioneer in the field of development of library service and education for Negroes, was closed in June, 1939.

With the publication of the *Classification and Pay Plans for Municipal Public Libraries*, the A.L.A. Board on Salaries, Staff, and Tenure will prepare plans for libraries in institutions of higher education, school libraries, and county libraries. Other work and studies being undertaken or continued by this board include a model scheme of service for libraries; work with the U.S. Bureau of Immigration concerning the entrance into this country of foreign librarians who wish positions here; cost of living studies in the various sections of the country; and collection of data concerning persons desiring exchanges and libraries with which exchanges can be made for that year.

Gifts, Grants, and Buildings. Gifts of money, manuscripts, and books to libraries have been numerous during the past year. The people of the United States were presented by President Roosevelt with all of his books, papers, journals, and other material collected during his years in public life and with twelve acres of his estate. The Federal Government will assume responsibility for the maintenance and operation of the library housing this collection, which will be built upon

this ground. Private subscriptions make possible the building of the library. In December, 1938, Miss Annie-May Hegeman of Pittsburgh deeded valuable property in Washington to the Library of Congress Trust Fund Board with the suggestion that the income be used toward the maintenance of its staff of consultants. When the property is sold, one half of the proceeds goes to the Smithsonian Institution. A bequest of \$1,000,000 from Dr. John Martin Vincent was received by the department of history of Johns Hopkins University and his entire library was left to the University. A rare library of books, pamphlets, and manuscripts on American history was presented by the late Tracy W. McGregor of Detroit, to the University of Virginia and is housed in the McGregor Room of the University's new library. The University of Louisville Library received the legal papers of Justice Brandeis, upon his retirement. A gift of \$250,000 for the establishment of a fund for book purchases will be presented to Yale Law Library by John A. Hooper of York, Pennsylvania, providing other alumni and friends of the school raise \$750,000. Mrs. George B. Alvord of West Hartford gave \$25,000 to Yale University Library for the purchase of books and manuscripts in the field of American literature. A valuable collection of rare volumes on Venetian history was presented to Connecticut College Library.

Among the notable gifts of money for library buildings are: \$600,000 from various foundations and individual donors for a building at Stanford University to house the Herbert Hoover Library on War, Revolution, and Peace; \$366,000 from Cyrus and Gordon McCormick as an endowment in memory of their father, Cyrus Hall McCormick, for the maintenance of the proposed new Princeton University library building and \$100,000 from Miss Jessie Munger for the same library's treasure room; a gift from Merton L. Miller which will make possible the completion of a \$450,000 building at Colby College, Waterville, Maine; \$50,000 to Bucknell University, Lewisburg, Pennsylvania, from an anonymous donor, toward the construction of a new library; \$30,000 plus land for the building from Mr. and Mrs. Clarence Horace Wickham of Manchester for a library building at Burnside, Connecticut; a new library for Passaic, New Jersey, constructed by Julius Forstmann on the site of his old residence; and \$50,000 from the estate of Arthur LaGrange to the Claverack, New York, Library. Book trucks for county and playground service have been given the Lancaster and Wilkes-Barre, Pennsylvania, Libraries.

A number of new libraries are being constructed with the aid of grants from the Public Works Administration. Among the larger ones are the Toledo Public Library, which will cost about \$2,000,000; University of Alabama, over half a million; Southwest Missouri State Teachers College Library, Cape Girardeau, \$350,000; a building to house the Chattanooga Public and University Libraries, \$300,000; Mason City, Iowa, Public Library, \$350,000; University of Georgia Library, Athens, \$315,000; State College of Education Library, Greeley, Colorado, \$207,000; Central Missouri State Teachers College Library, Warrensburg, \$227,000.

Among grants made by the Carnegie Corporation of New York were University of Denver School of Librarianship, \$50,000; Pratt Institute School of Library Science, \$50,000; University

of Pennsylvania, \$20,000 to finance a study of library resources in the Philadelphia area and the development of a plan to co-ordinate them through a community bibliographic and research center; University of Buffalo, \$17,000, for its unique library of books and manuscripts of modern poetry; grants in aid for advanced study in librarianship, awarded by the A.L.A. Committee on Fellowships and Scholarships to five applicants from the United States and one from Canada; and Montclair Public Library, \$6,000 supplemented by funds from thirty-seven libraries included in a study of cost accounting in public libraries.

The Rockefeller Foundation has made grants of \$60,000 for a three-year project of providing American books for selected popular libraries in Norway, Sweden, Denmark, Finland, Holland, Belgium, Switzerland, France and Great Britain; \$30,000 for a three-year project covering studies and work with Latin America; \$38,600 supplementing previous grants for work on the *Union List of Serials* and varying amounts covering visitors' grants to librarians from foreign countries.

Publications. Additional publications in the library field not listed under *Library Association, American*, include: Thomas R. Adam, *The Museum and Popular Culture* (American Association for Adult Education, 1939); *Bibliographic Index*, a cumulative bibliography of bibliographies, quarterly with annual cumulation, began publication 1938 (H. W. Wilson); Arthur E. Bostwick, *A Life with Men and Books* (H. W. Wilson, 1939); Lester Condit, *A Pamphlet about Pamphlets* (University of Chicago Press, 1939); Dorothy E. Cook and Eva Rahbek-Smith, *Educational Film Catalog* (H. W. Wilson, rev. ed., 1939); Talbot Hamlin, *Some European Architectural Libraries, Their Methods, Equipment and Administration* (Columbia University Press, 1939); James C. M. Hanson, *A Comparative Study of Cataloging Rules*, based on the Anglo-American code of 1908 (University of Chicago Press, 1939); Hilaire and Meyer Hiler, *Bibliography of Costume* (H. W. Wilson, 1939); Carleton B. Joeckel, *Current Issues in Library Administration* (University of Chicago Press, 1939); Andrew D. Osborn, *Prussian Instructions, Rules for the Alphabetical Cataloging of the Prussian Libraries*; translated from the 2d ed. (Univ. of Michigan Press, 1938); Laurence F. Schmeckebier, *Government Publications and Their Use* (Brookings Institution, rev. ed., 1939); Minnie E. Sears, *List of Subject Headings for Small Libraries*, 4th ed., rev. by Isabel Stevenson Munro (H. W. Wilson, 1939); James W. Thompson, *The Medieval Library* (Univ. of Chicago Press, 1939); Douglas Waples, *Investigating Library Problems* (Univ. of Chicago Press, 1939); Douglas Waples and Leon Carnovsky, *Libraries and Readers in the State of New York* (Univ. of Chicago Press, 1939); Martha Wilson, *School Library Management*, 6th ed., rev. and rewritten by Althea M. Currin (H. W. Wilson, 1939); Frederick C. Hicks and Katherine Warren, *Yale Law Library Classification*.

MILDRED OTHMER PETERSON.

LIBYA, lib'yā. An Italian colony (Cyrenaica and Tripolitania) in North Africa. Area, 677,044 square miles; population (1938), 850,250, including 78,721 Europeans and 771,529 natives, of whom 27,740 were Jews. The chief towns are on

the coast; they are: Tripoli (the capital), 98,861 inhabitants; Bengasi (Benghazi), 48,510; Misurata, 15,000; and Homs (Khoms), 31,000. In the interior there are important caravan stations at Ghadames, Sinauen, Mizda, Murzuq (Murzuk), and Ghat.

Production and Trade. The chief agricultural products are barley, dates, olives, oranges, lemons, almonds, and vegetables. Other important products are salt, sponges, fish, and tobacco. Livestock in the colony (August, 1937): 719,794 sheep, 491,181 goats, 65,970 cattle, 75,678 camels, 58,247 donkeys, mules, and horses. In 1938, imports were valued at \$16,900,000 (in old U.S. gold dollars) and exports at \$3,300,000.

Communications. In 1939 there were 242 miles of railway line and 8342 miles of highways, including the new 1132-mile littoral highway extending from Tunisia to Egypt. Air communications include a daily service, Tripoli-Rome; a thrice-weekly service, Bengasi-Sirte-Tripoli; and a weekly service, Bengasi-Cyrene (Cyrene)-Derna (Derne)-Tobruk. During 1937, 1438 vessels entered the ports of Libya, landing 385,604 tons of freight and 59,039 passengers; 1422 ships left the ports with 66,779 tons of freight and 47,910 passengers.

Government. The budget for 1938-39 was balanced at 462,345,471 lire. On Oct. 25, 1938, the Fascist Grand Council, meeting in Rome, decreed the inclusion of the four provinces of Libya—Tripoli, Misurata, Bengasi and Derna—in the national territory of Italy. A scheme for the resettlement of 80,000 Italians in Libya by the end of 1942 was launched in 1938 (see 1938 YEAR BOOK, p. 360). The program is financed by the Italian Government, provision having been made for appropriations of 150,000,000 lire annually in the 1938-39, 1939-40, and 1940-41 budgets. The land allotted to the emigrants is donated by the government of Libya, together with funds for the establishment of rural centers, roads, aqueducts, artesian wells and other local improvements. Governor-General, Air Marshal Italo Balbo (appointed, November, 1933). See ITALY under History.

LIECHTENSTEIN, līk'ten-shtīn. An independent principality between Switzerland and Austria. Area, 65 square miles; population (1938 estimate), 12,000. Vaduz (capital) had 2000 inhabitants (estimated) in 1938. Corn, wine, fruit, wood, marble are the chief products. Main industries are cotton spinning and weaving, leather goods, pottery, and cattle rearing. Swiss currency has been in use since February, 1921, and since January, 1924, Liechtenstein has been included in the Swiss Customs Union. Switzerland administers the posts and telegraphs, and has charge of the foreign interests.

In 1939 revenue was estimated at 2,099,300 francs; expenditure at 1,955,170 francs. (Swiss franc averaged \$0.2287 in 1938 and was quoted at \$0.2244 on Dec. 26, 1939). The constitution of Oct. 5, 1921, continued the monarchy and provided for a Diet of 15 members elected every 4 years. Reigning Prince, Francis Joseph II (acceded July 25, 1938 and acknowledged by the people at the traditional *huldegung* in May, 1939). Administrator, Dr. Joseph Hoop (appointed Aug. 4, 1928). A proposal to join the Reich politically was rejected by 95 per cent of the voters at a plebiscite in 1939.

LIFE INSURANCE. See INSURANCE under LIFE INSURANCE, page 365.

LIGHTHOUSE SERVICE. See COAST GUARD.

LIGHTING. See ELECTRICAL ILLUMINATION; ELECTRIC LIGHT AND POWER.

LINDBERGH, CHARLES A. See CANADA under *History*.

LIONS CLUBS, INTERNATIONAL ASSOCIATION OF. Headquarters, 332 South Michigan Avenue, Chicago, Ill. An organization of business and professional men's clubs, formed in Chicago, Ill., June 7, 1917. The first purely service club in the country. Its purpose, to promote good government and good citizenship, and promote high ethical standards in business and the professions. One active and one associate member admitted from each business or profession, or principal division of such. Starting with 25 clubs, the Association by the end of 1939 had grown to 3,500 clubs and 125,000 members. At the annual convention at Pittsburgh, Pa., July 18 to 21, 1939, these officers were elected: President, Alexander T. Wells, New York City; vice-presidents, Karl M. Sorrick, Jackson, Mich., George R. Jordan, Dallas, Texas, and Edward H. Paine, Michigan City, Ind. The founder of the Association, Melvin Jones, has been secretary-treasurer from the beginning. He is also editor of the official magazine, *The Lion*. The 1940 convention will be held at Havana, Cuba, July 23-25.

LIPMAN, JACOB GOODALE. An American agricultural chemist, died at New Brunswick, N. J., Apr. 19, 1939. Born in Friedrichstadt, Russia, Nov. 18, 1874, he was brought to the United States in 1888, and received his education at the Baron de Hirsch Agricultural School in New Jersey, at Rutgers University (B.Sc., 1896) and Cornell University (A.M., 1900, Ph.D., 1903). Upon graduation from Rutgers, he joined the New Jersey Agricultural Experiment Stations, and in 1901 he became its soil chemist and bacteriologist, heading the first department of its kind in the country. After 1911 he was director of the Station. Also, after 1902, Dr. Lipman was attached to the faculty of Rutgers University, as assistant professor of agriculture (1906-07), associate professor (1907-10), professor of soil fertility and bacteriology (1910-13), professor of agriculture after 1913, and dean of agriculture after 1915. In addition to these duties, he lectured at the universities of Illinois, Cornell, Tennessee, and Nebraska.

A leader in the field of agricultural chemistry, Dr. Lipman founded and edited *Soil Science* after 1916 and was associate editor of *Annales des Sciences Agronomiques* and of the *Archiv für Pflanzenbau*. He was a member of many scientific societies and president of the International Society of Soil Sciences during 1924-27. In international affairs he was no less prominent, being a member of several foreign agricultural academies and a delegate to the General Assembly International Institute of Agriculture held at Rome (1922, 24, 26), to the 3d International Conference of Soil Science at Prague, 1922, to the 4th Conference at Rome, 1924. Also, he was president of the 1st International Congress of Soil Science held in Washington, 1927, chairman of the American delegation to the 3d Congress at Oxford, 1935, a delegate to the 1st International Nitrogen Conference at Biarritz, 1926, to the World Dairy Congress in London, 1928, and to the 5th International Technical and Chemical Congress of Agricultural Industries held in The Netherlands in 1937.

Particularly interested in the conservation and replacement of soil nutrients, his researches in these fields were outstanding contributions to the progress of agriculture, and for his achievements he was awarded the Chandler medal of Columbia University in 1934. Beside numerous technical papers, he wrote *Bacteria in Relation to Country Life* (1908) and *Laboratory Guide of Soil Bacteriology* (1912).

LIPPE. See GERMANY.

LIQUOR PRODUCTION. See ALCOHOLIC BEVERAGES.

LITERATURE, ENGLISH AND AMERICAN. Biography. Carl Sandburg's *Abraham Lincoln: the War Years* was highly praised. Other American Presidents were treated in: vols. vii and viii of Ray Stannard Baker's *Woodrow Wilson*; Henry F. Pringle's *The Life and Times of William Howard Taft*; Oliver Perry Chitwood's *John Tyler*; and Raymond Moley's *After Seven Years*, about Franklin D. Roosevelt. Concerned with other American political figures: *Samuel Jones Tilden*, by Alexander C. Flick; *Fremont*, by Allan Nevins; *Alexander Hamilton*, by David Loth; *Thaddeus Stevens*, by Alphonse R. Miller; *Statesmen of the Lost Cause*, Jefferson Davis and his cabinet, by Burton J. Hendrick; and two autobiographies: *Tar Heel Editor*, by Josephus Daniels, and *My Memoir*, written by Edith Bolling Wilson.

Either *Thoreau*, by Henry Seidel Canby, or *The Letters of Ralph Waldo Emerson*, edited by Ralph L. Rusk, led the list of biographies of American literary people. M. A. De Wolfe Howe published *Holmes of the Breakfast Table*, and Katherine Burton's *Paradise Planters* was about the Brook Farm folk. A group of literary autobiographies included: Louis Untermeyer's *From Another World*; Leonard Bacon's *Semi-Centennial*; and Vincent Sheean's *Not Peace But a Sword*, his life March 1938-March 1939. W. D. Puleston published *Mahan*, and Theodore Jorgenson and Nora O. Solum O. E. *Rölvaaq*.

Other Americans provided rich biographies, such as, Bellamy Partridge's *Country Lawyer*; James Peter Zollinger's *Sutter*; John Bakeless's *Daniel Boone*; A. J. G. Perkins and Theresa Wolfson's *Frances Wright*; James Dow McCallum's *Eleazar Wheelock*; Mabel L. Robinson's *Runner of the Mountain Tops*, about Agassiz; Arthur M. Schlesinger, Jr.'s *Orestes A. Brownson*; Joseph Henry Jackson's *Tintypes in Gold*, Western highway robbers; Albert Parry's *Whistler's Father*; William Schack's *And He Sat among the Ashes*, about Eilshemius; George Palmer Putnam's *Soaring Wings*, about Amelia Earhart; Herbert C. Satterlee's *J. Pierpont Morgan*; M. R. Werner's *Julius Rosenwald*; and distinguished autobiographies, as, *The Road to Richmond*, Civil War memoirs of Abner K. Small, edited by Harold Adams Small; *All in the Day's Work*, by Ida M. Tarbell; *Across the Busy Years*, by Nicholas Murray Butler; *Fighting Years*, by Oswald Garrison Villard; *Autobiography with Letters*, by William Lyon Phelps; *A Goodly Fellowship*, by Mary Ellen Chase; *Maud*, the diary of a girl, 1881-95, edited by Richard Lee Strout; *We Pointed Them North*, a cowboy's autobiography, by E. C. Abbott and Helena Huntington Smith; *The Flowing Stream*, by Florence Finch Kelly; *Hollywood Saga*, by William C. De Mille; *A Victorian in the Modern World*, by Hutchins Hapgood; *My Day in Court*, by Arthur Train; *Death of a Yale Man*, by Malcolm Ross;

and *Days of Our Years*, by Pierre van Paassen, a foreign correspondent.

E. K. Chambers' *Samuel Taylor Coleridge* and Lawrence Hanson's *The Life of Samuel Taylor Coleridge: the Early Years*, did a life long neglected among British literary figures. Others included: *Pride and Passion*, about Burns, by DeLancey Ferguson; Townsend Scudder's *Jane Welsh Carlyle*; Lionel Trilling's *Matthew Arnold*; George Paston and Peter Quennell's *To Lord Byron*, letters from women; Arthur Bryant's *Samuel Pepys, the Saviour of the Navy*; *The Letters of William and Dorothy Wordsworth*, edited by Ernest de Selincourt; and *Autobiography*, by A. A. Milne; *I Knock at the Door*, by Sean O'Casey; *My Life*, by Havelock Ellis.

British political figures: David Cecil's *The Young Melbourne*; A. Mervyn Davies' *Clive of Plassey*; two books about George II's queen: *Caroline*, by Peter Quennell, and *Caroline of Ansbach*, by R. L. Arkell; *Charles II*, by Hilaire Belloc. Among other Britishers: A. S. Eve's *Rutherford*, the physicist; A. J. Finberg's *The Life of J. M. W. Turner*; Hiram Bingham's *Elihu Yale*; Kenneth B. Murdock's *The Sun at Noon*, about three 17th century people.

Other biographies included: Thomas Rourke's *Man of Glory* (Bolivar); Fletcher Pratt's *Road to Empire*, Napoleon as rising general; Valerie Pirie's *His Majesty of Corsica*, an 18th century adventurer; Theodore Maynard's *Apostle of Charity*, St. Vincent de Paul; Francis Steegmuller's *Flaubert and Mme. Bovary*; Max Nomad's *Apostles of Revolution*; Catherine Drinker Bowen's *Free Artist*, about Anton Rubinstein; Willard Brockway and Herbert Weinstock's *Men of Music*, from beginners to Stravinsky; Laura Riding's *Lives of Wives*, of ancient great men; Saul K. Padover's *The Life and Death of Louis XVI*; Katherine John's *The Prince Imperial*, Napoleon III's son; Walter Pach's *Ingres*; Lewis Gibbs' *Vanessa and the Dean*, about Jonathan Swift, and Constanca de la Mora's *In Place of Splendor*, an autobiography.

Criticism and the History of Literature.

General works in this field included: Malcolm Elwin's *Old Gods Falling*, English literature from 1887 to 1914; C. S. Lewis and E. M. W. Tillyard's *The Personal Heresy*, a debate; Irwin Edman's *Arts and the Man*; Harry Kemp and others' *The Left Heresy*, an attack; Franklin Walker's *San Francisco's Literary Frontier*; and Ian Forbes Fraser's *The Spirit of French Canada*. About poetry were: Ruth Bailey's *Dialogue on Modern Poetry*; G. Wilson Knight's *The Burning Oracle*, from Shakespeare to Byron; Theodore Spencer and Mark van Doren's *Studies in Metaphysical Poetry*; John S. Diekhoff's *Milton on Himself*. In drama, Mark van Doren published *Shakespeare*; Esther Cloudman Dunn *Shakespeare in America*, performances and influences; and Joseph Wood Krutch *The American Drama since 1918*. William York Tindall did not spare criticism in *D. H. Lawrence and Susan His Cow*, while *Melville in the South Seas*, by Charles Roberts Anderson, showed the sources of the novels. Maurice Evans wrote about G. K. Chesterton.

Drama. Robert E. Sherwood's Pulitzer prize play, *Abe Lincoln in Illinois*, marked a year which also saw two Bernard Shaw plays: *Geneva* and *In Good King Charles's Golden Days*; two G. S. Kaufman and Moss Hart plays: *The American Way* and *The Man Who Came to Dinner*; *The White Steed* and *The Coggerers*, by Paul Vincent

Carroll; *What Say They?* by James Bridie; *The Little Foxes*, by Lillian Hellman; *Kiss the Boys Goodbye*, by Clare Boothe; *The Family Reunion*, by T. S. Eliot; *The Gentle People*, by Irwin Shaw; *My Heart's in the Highlands*, by William Saroyan; *Johnson Over Jordan*, by J. B. Priestley; *American Landscape*, by Elmer Rice; *Skylark*, by Samson Raphaelson; *Rocket to the Moon*, by Clifford Odets; *Dead Heat*, by Robert Vansittart. Anthologies included: *American Folk Plays*, edited by Frederick H. Koch, and *Best Short Plays of the Social Theatre*, edited by William Kozenko.

Economics. Eli Ginzberg's *The Illusion of Economic Stability* said stability was obtainable under no system, and in *Dividends to Pay* E. D. Kennedy said depression was normal. N. S. B. Gras defended historically *Business and Capitalism*, while seven Harvard and Tufts economists defended government spending in *An Economic Program for American Democracy*. Gustavus Myers wrote about *The Ending of Hereditary American Fortunes*. Depression in rural areas was discussed by T. J. Woofter and Ellen Winston in *Seven Lean Years*, while Omar and Ryllis Goslin exposed small town economy in *Our Town's Business*. Economic histories included: *Steam Conquers the Atlantic*, by David Budlong Tyler, and *The Rise of New York Port, 1815-1860*, by Robert Greenhalgh Albion.

Essays. Max Lerner's *Ideas are Weapons* was largely political, while Irwin Edman's *Candle in the Dark* was political and philosophical. In *Orchard's Bay*, Alfred Noyes spoke much of his garden, and Odell Shepard, in *Connecticut*, praised his state. E. B. White, in *Quo Vadimus? or the Case for the Bicycle*, Whit Burnett, in *The Literary Life and the Hell with It*, and Stephen Leacock, in *Too Much College*, were each humorous about his work. Walter de la Mare's *Behold, This Dreamer* included essays and an anthology of other kinds of writing. Ezra Pound discussed *Culture*, and Christopher Morley published *Letters of Askance*.

Art. Thomas Craven edited two excellent volumes, with less text than reproduction: *A Treasury of Art Masterpieces*, from the Renaissance to now, and *A Treasury of American Prints*. Similar in plan were Peyton Boswell, Jr.'s *Modern American Painting*; *World Famous Paintings*, edited by Rockwell Kent; *Masterpieces of European Painting in America*, edited by Hans Tietze; *Contemporary Painting in Europe*, edited by Anthony Bertram. John Sloan's *Gist of Art* set forth his own principles. James Thomas Flexner's *America's Old Masters* dealt with West, Copley, Stuart, Peale. Roger Fry's *Last Lectures* considered ancient art. Rita Wellman's *Victoria Royal* exhibited an age's taste. Among discussions of individuals: Gertrude Stein's *Picasso*; Albert C. Barnes and Violette de Mazia's *The Art of Cezanne*.

History. Volumes iv, v, vi, of Arnold J. Toynbee's *A Study of History* were concerned with the breakdowns of civilizations. Otto Neurath's *Modern Man in the Making* likewise covered the world, conveying its information by graphs. Philip Guedalla's *The Hundredth Year* was 1936, in all parts of the world.

The Heritage of America, edited by Henry Steele Commager and Allan Nevins gave the documents. Charles A. and Mary R. Beard's *America in Midpassage* covered the years from 1927. Also in American History: *America's Sil-*

ver Age, by Gerald W. Johnson, (Clay, Webster, Calhoun); *The Incredible Era*, (Harding's) by Samuel Hopkins Adams; some frontier studies: *The Rampaging Frontier*, by Thomas D. Clark; *The Trampling Herd*, by Paul I. Wellman; *The Westward Movement*, by Ina Faye Woestemeyer; *The Old Santa Fé Trail*, by Stanley Vestal; *Whiskey Rebels*, by Leland D. Baldwin. H. C. Peterson's *Propaganda for War*, and Frederic L. Paxson's *America at War* dealt with 1914-18. Also: *The Rise of American Naval Power, 1776-1918*, by Harold and Margaret Sprout; *The Invisible Empire*, the Ku Klux Klan, 1866-71, by Stanley F. Horn; *Latin America*, by F. A. Kirkpatrick.

In European history appeared: volume xii and last of *The Cambridge Ancient History*, edited by S. A. Cook, F. E. Adcock, and M. P. Charlesworth; *The Life of Greece*, by Will Durant; *The Thirty Years' War*, by C. V. Wedgwood; *The French Revolution as Told by Contemporaries*, by E. L. Higgins; *The Manila Galleon*, by William Lytle Schurz, the trade between Spain and the Philippines; *The Romanovs*, by William Gerhardt; *The Fall of the Russian Monarchy*, by Bernard Pares; *The War Behind the War 1914-1918*, the home fronts, by Frank P. Chambers; *The Forgotten Peace: Brest-Litovsk*, by John W. Wheeler-Bennett; *Europe: Versailles to Warsaw*, the background of the present European war, by Ronald Stuart Kain.

British history seemed scanty, but included: volume xi of *The Oxford History of England*, *The Whig Supremacy, 1714-1760*, by Basil Williams; *Traders' Dream*, the East India Company, by R. H. Mottram; *A Cartoon History of Our Times*, by David Low.

Juvenile. Noteworthy children's books included: Kay Boyle's *The Youngest Camel*; W. Somerset Maugham's *Princess September and the Nightingale*; T. S. Eliot's *Old Possum's Book of Practical Cats*; Gertrude Stein's *The World Is Round*; Dan Beard's autobiography *Hardly a Man Is Now Alive*; Eve Garnett's *The Family from One End Street*; Elizabeth Morrow's *A Pint of Judgment*; Madeline Darrough Horn's *Lag Cabin Family*; Dr. Seuss' *The King's Stilts*; Fred Schwed, Jr.'s *Wacky, The Small Boy*; Munro Leaf's *Fair Play*; Phil Stong's *Cowhand Goes to Town*; Olive Beaupré Miller's *Heroes, Outlaws, and Funny Fellows*, American; Elinore Blaisdell's *Falcon, Fly Back*.

Novels. Aside from the year's success, John Steinbeck's *The Grapes of Wrath*, about migratory labor, proletarian novels did not abound, but included: Frederic Prokosch's *Night of the Poor* and Pietro di Donato's *Christ in Concrete*. Showing political prepossessions were the anti-leftist *Adventures of a Young Man*, by John Dos Passos, the anti-violence *The Wings of the Morning*, by Edward S. Hyams, the anti-Nazi *Mr. Emmanuel*, by Louis Golding. Regional novels included: John P. Marquand's *Wickford Point*, New England; Du Bose Heyward's *Star Spangled Virgin*, the Virgin Islands; Bernice Kelly Harris' *Purslane*, North Carolina. Thomas Wolfe's *The Web and the Rock* praised America. Dorothy Canfield's *Seasoned Timber* dealt with Vermont.

An oddity was James Joyce's *Finnegans Wake*. Aldous Huxley's *After Many a Summer* dealt with the problem of evil. Millen Brand's *The Heroes* and Dalton Trumbo's *Johnny Got His Gun* concerned war veterans. Ethel Vance's *Es-*

cape and Geoffrey Household's *Rogue Male* were exciting about dictatorships.

Historical novels included: Vardis Fisher's *Children of God*, the Mormons; C. S. Forester's *Captain Horatio Hornblower*, Napoleonic era; Clifford Dowdey's *Gamble's Hundred*, colonial Virginia; Eric Linklater's *Judas*; Lin Yu-tang's *Moment in Peking*, since 1900; H. M. Tomlinson's *The Day Before*, the Edwardian era; Francis Griswold's *A Sea Island Lady*, post Civil War; W. L. River's *The Torguts*, 18th-century folk migration; Chard Powers Smith's *Artillery of Time*, small town about 1850; Stuart Cloete's *Watch for the Dawn*, 19th-century South Africa.

Fantasies included: T. H. White's *The Sword in the Stone* and *The Witch in the Wood*, Arthurian; R. C. Sherriff's *The Hopkins Manuscript*, the end of civilization; Sylvia Townsend Warner's *After the Death of Don Juan*, with modern trimmings. Notable first novels: Richard Llewellyn's *How Green Was My Valley*, Welsh; Brainard Cheney's *Lightwood*, post-Civil War Georgia; David Rame's *Wine of Good Hope*, South Africa.

Waldo Frank's *The Bridegroom Cometh* was philosophical. H. G. Wells' *The Holy Terror* was dictator of the world. Pearl Buck's *The Patriot* concerned a Sino-Japanese marriage. John Masefield's *Live and Kicking Ned* contained adventure. A prize-winner was John Selby's *Sam*. Christopher Morley's *Kitty Foyle*, a love story, was very popular. Louis Bromfield published three novels and some short pieces in *It Takes All Kinds*. Hugh Walpole's *The Sea Tower* was psychological horror. William Faulkner's *The Wild Palms* mixed love and action. Henry Handel Richardson's *The Young Cosima* concerned Richard Wagner's wife. *Uncle Fred in the Springtime*, by P. G. Wodehouse, was humorous. First of Henry Miller's works to be published in America was *The Cosmological Eye*. W. Somerset Maugham published *Christmas Holiday*, and Gene Fowler *Illusion in Java*. George R. Stewart's *Doctor's Oral* was satirical about universities. Elizabeth Bowen's *Death of the Heart* showed the decay of the English middle class. Zona Gale's *Magna* was a love story.

Poetry. Edna St. Vincent Millay's *Huntsman, What Quarry?* returned to her earlier manner. Archibald MacLeish's *America Was Promises* was socially conscious. Kenneth Patchen's *First Will and Testament* was proletarian verse. Delmore Schwartz's *In Dreams Begin Responsibilities* marked the appearance of new talent. Mark van Doren, Robert P. Tristram Coffin, and Laura Riding each published volumes called *Collected Poems*. Theda Kenyon's *Scarlet Anne* was a narrative about Anne Hutchinson. Others included: Stephen Spender's *The Still Centre*; Muriel Rukeyser's *A Turning Wind*; Babette Deutsch's *One Part Love*; Josephine Miles' *Lines at Intersection*; Paul Engle's *Corn*; Eileen Dugan's *Poems*, from New Zealand; Christopher La Farge's *Each to the Other*, a novel in poetry; Herbert Bruncken's *The Long Night*; Reuel Denney's *The Connecticut River and Other Poems*; Sara Henderson Hay's *This, My Letter*; David Morton's *All in One Breath*.

Politics. Democracy versus dictatorship received much attention again this year, shown by: Peter F. Drucker's *The End of Economic Man*, insisting that democracy must create the concept of non-economic man or end; *Democracy*, by

Eduard Benes; *The New Democracy and the New Despotism*, by Charles E. Merriam; *Democracy Works*, by Arthur Garfield Hays, optimistic; *The March of Fascism*, by Stephen Raushenbush; *Dictatorship: Its History and Theory*, by Alfred Cobban; *Revolutions and Dictatorships*, by Hans Kohn; *The Foundations of Democracy*, by T. V. Smith and Robert A. Taft, a radio debate. Concerned with the relations between nations were: Sir Arthur Salter's *Security: Can We Retrieve It?*; Anthony Eden's *Foreign Affairs*; Frederick L. Schuman's *Europe on the Eve*; Hans Speier and Alfred Kähler's *War in Our Time*; *Graham Hutton's Survey after Munich*; G. E. R. Gedy's *Betrayal in Central Europe*; Winston S. Churchill's *Step by Step, 1936-1939*; but most of these were made to seem badly dated by the outbreak of war. The debate over American neutrality was carried on in: *Can America Stay Neutral?* by Allen W. Dulles and Hamilton Fish Armstrong; *The New Western Front*, by Stuart Chase and Marian Tyler; and *Blood Is Cheaper than Water*, by Quincy Howe.

George Catlin, in *Anglo-Saxony and Its Tradition*, and Clarence K. Streit, in *Union Now*, advocated united effort by the British Empire and the United States. Dorothy Thompson's *Let the Record Speak* was day-by-day comment. About Asiatic affairs: John Gunther's *Inside Asia*; Hallett Abend's *Chaos in Asia*; A. Morgan Young's *The Rise of a Pagan State (Japan)*; Edgar Ansel Mowrer's *The Dragon Wakes (China)*.

Separate countries were discussed in: *Mexico Marches*, by J. H. Plenn; *The Mexican Challenge*, by Frank L. Kluckhohn; *No Ease in Zion*, about Palestine, by T. R. Feiwel; *Poland: Key to Europe*, by Raymond Leslie Buell; *Norway*, by Agnes Rothery; *Iceland*, by Vilhjalmur Stefansson; *We Shall Live Again*, about Czechoslovakia, by Maurice Hindus; *The Politics of the Balkans*, by Joseph S. Roucek.

Others included: Felix Frankfurter's *Law and Politics*; Joseph Alsop and Robert Kintner's *Men around the President*; and *The British War Blue Book*.

Religion. Two books gave the documents for comparative religion: *The Bible of Mankind*, edited by Mirza Ahmed Sohrab, which emphasized likeness among nine religions, and *The Bible of the World*, edited by Robert O. Ballou, which emphasized differences in seven. Sydney Herbert Mellone's *The Bearings of Psychology on Religion* said religion arose from frustration, while W. B. Selbie's *Christianity and the New Psychology* attacked the latter's "mechanism." Kenneth Scott Latourette told of the expansion of Christianity in *Three Centuries of Advance, 1500-1800*. Edward Westermarck found dubious morals in *Christianity and Morals. I Believe*, edited by Clifton Fadiman, exposed personal philosophies. Other religious books were: Charles E. Raven's *The Gospel and the Church*; Sir Alfred Zimmern's *Spiritual Values and World Affairs*, the Christian's duty in politics; *The Study of Theology*, edited by Kenneth Escott Kirk; *The New Immortality*, by J. W. Dunne, about non-personal time.

Science. General works included: *The Philosophy of Physical Science*, by Sir Arthur Eddington; *The Social Function of Science*, Marxist, by J. D. Bernal; *Science Today and Tomorrow*, by Waldemar Kaempfert; *Science for the World of Tomorrow*, by Gerald Wendt. Histories

included: F. Sherwood Taylor's *The March of Mind*; A. Wolf's *A History of Science, Technology, and Philosophy in the Eighteenth Century*. Physicians were considered in: James Harpole's *Body Menders*; Harvey Graham's *The Story of Surgery*; Bertram M. Bernheim's *Medicine at the Crossroads*, which advocated reforms in practice. In biology: Earnest Albert Hooton's *The Twilight of Man*, alarmist; Amram Scheinfeld and Morton D. Schweitzer's *You and Heredity*; Joseph W. Bigger's *Man against Microbe*; Caryl P. Haskins' *Of Ants and Men*. Donald Culross Peattie's *Flowering Earth* had to do with botany. In astronomy: Arthur Draper and Marian Lockwood's *The Story of Astronomy*; George E. Frost's *Planets, Stars, and Atoms*. In physics: George Russell Harrison's *Atoms in Action*, and Dayton C. Miller's *Sparks, Lightning, Cosmic Rays. Flash!* by Harold E. Edgerton and James R. Killian, Jr., showed the marvels of high-speed photography.

Short Stories. Katherine Anne Porter's *Pale Horse, Pale Rider* had been long awaited. *Here Lies* were the collected stories of Dorothy Parker. Ben Hecht's *Book of Miracles* was mystical. Kressmann Taylor's single story, *Addressee Unknown*, made a sensation. Noel Coward adventured into the form with *To Step Aside*. Others included: Stephen Vincent Benet's *Tales before Midnight*; Jerome Weidman's *The Horse that Could Whistle "Dixie"*; William March's *Some Like Them Short*; John O'Hara's *Files on Parade*; Irwin Shaw's *Sailor off the Bremen*; Arthur Kober's *Pardon Me for Pointing*; *The Damon Runyon Omnibus*; Rosita Forbes' *These Are Real People*. W. Somerset Maugham's *Tellers of Tales* was a fine anthology.

Sociology. Remarkable case studies of American cities were: *Industrial Valley*, about Akron, by Ruth McKenney; *Holyoke, Massachusetts*, by Constance M. Green; *Five Cities*, Seattle, Omaha, Shenandoah, Birmingham, Louisville, by George R. Leighton. The Federal Writers' Project published interviews given in the middle South, *These Are Our Lives*. Willson Whitman's *God's Valley*, of the Tennessee, dealt also with TVA. Eugene and Arline Löhrke, in *Night over England*, showed the masses' feeling about the Munich crisis.

John Dewey's *Freedom and Culture* and Jacques Barzun's *Of Human Freedom* were philosophical. H. G. Wells' *The Fate of Man* prophesied doom, unless—, and Harry Elmer Barnes' *Society in Transition* was full of warnings and plans. Simon Strunsky's *The Living Tradition* showed what did not change in American life. Gerald Heard's *Pain, Sex, and Time* offered a way out of the world's troubles. Robert S. Lynd's *Knowledge for What?* discussed the place of the social sciences in culture.

About races: W. E. B. Du Bois' *Black Folk—Then and Now*; Herbert J. Seligman's *Race against Man*. About agriculture and rural life: Carleton Beals' *American Earth*, the social effects of land's misuse; O. E. Baker, Ralph Borsodi, and M. L. Wilson's *Agriculture in Modern Life*; Carey McWilliams' *Factories in the Fields*, about migratory labor in California. About prostitution: Hickman Powell's *Ninety Times Guilty*, the racket in New York City; Courtney Riley Cooper's *Designs in Scarlet*. About propaganda: C. Hartley Grattan's *The Deadly Parallel*; and *The Fine Art of Propaganda*, edited by Alfred McClung Lee and Eliza-

beth Briant Lee, an analysis of Father Coughlin's speeches.

Other books were: Carl Crow's *The Chinese Are Like That*; Silas Bent's *Newspaper Crusaders*; Fred Rodell's *Woe unto You, Lawyers!* a gay attack, and *You Americans*, edited by B. P. Adams, American life as seen by 15 foreign-press correspondents.

Travel and Out-of-Doors. Federal Writers' Project guides published this year included: *California; Nebraska; Alaska; New York City; Montana; Kansas; Kentucky.*

About Central and South America: Addison Burbank's *Guatemala Profile*; Vera Kelsey and Lilly de Jonge Osborne's *Four Keys to Guatemala*; Ivan T. Sanderson's *Caribbean Treasure*; Thomas Gann's *Glories of the Maya*; Desmond Holdridge's *Feudal Island*, in the mouth of the Amazon; Erna Fergusson's *Venezuela*; Graham Greene's *Another Mexico*, unfriendly; Alexander Wilbourn Weddell's *Introduction to Argentina*; Felix Riesenbergs's *Cape Horn*.

Christopher Isherwood said *Goodbye to Berlin*, before the Nazis; Nora Waln's *Reaching for the Stars* also dealt with Germany. Erskine Caldwell and Margaret Bourke-White published *North of the Danube*. Roy Alexander's *Cruise of the Raider "Wolf"* was an exciting narrative of 1917.

Paul McGuire published *Australia: Her Heritage, Her Future*, and Agnes Newton Keith's *Land below the Wind* was about Borneo. W. H. Auden and Christopher Isherwood made a *Journey to a War*, the Chinese, and Nym Wales went *Inside Red China*.

Carl Carmer wrote about *The Hudson*, and Desmond Holdridge about *Northern Lights* in Labrador. Edward Ellsberg explained submarines in *Men under the Sea*. Gordon S. Cochrane published *Baseball*.

War. Books explaining the technical aspects of war for the layman, all prepared before the invasion of Poland, made a noteworthy group this year. They included: George Fielding Eliot's *Bombs Bursting in Air*, and W. O'D. Pierce's *Air-War*, about air power; Fletcher Pratt's *Sea Power and Today's War*; Oswald Garrison Villard's *Our Military Chaos*, pacifistic; John C. De Wilde, David H. Popper, and Eunice Clark's *Handbook of the War*; Liddell Hart's *The Defence of Britain*; G. T. Garratt's *Gibraltar and the Mediterranean*.

See BOOK PUBLISHING; PAINTING; SCULPTURE; and the bibliographies under various articles.

BENFIELD PRESSEY.

LITHOGRAPHS. See PRINTS.

LITHUANIA, lith'û-â'nî-â. A Baltic republic, the independence of which was proclaimed Feb. 16, 1918. Capital, Vilna (restored to Lithuania by Russia in accordance with the terms of the Russo-Lithuanian mutual assistance pact, Oct. 10, 1939). Provisional capital in 1939, Kaunas (Kovno).

Area and Population. Including the Vilna territory and excluding Memel (ceded to Germany Mar. 22, 1939), Lithuania had an area of 22,964 square miles and an estimated population of 2,879,070 on Dec. 31, 1939. The newly annexed territory of Vilna, with 457,500 inhabitants, comprises 2570 square miles. The population of Memel was 153,793; area, 1100 square miles. About 80 per cent of the population is agricultural. Living births in 1938 numbered 57,951 (22.6 per 1000); deaths, 32,256 (12.6 per 1000); marriages, 20,248

(7.9 per 1000). Estimated populations of the chief cities on Jan. 1, 1939, were: Kaunas (Kovno), 152,000; Memel (Klaipėda), 40,000; Šiauliai, 31,000; Panevėžys, 26,000.

National Defense. Military service is compulsory. On Nov. 1, 1939, the army consisted of 25,775 active soldiers and 287,000 reservists (according to the Adjutant General's Office, Washington, D. C.). The air force comprised 775 men and 70 aircraft. One patrol vessel constituted the navy. Details concerning the Russian military bases in Lithuania are treated below under the section on *History*.

Education and Religion. About 15 per cent of the population was illiterate at the beginning of 1939. School attendance in 1937-38 was: Elementary, 207,173; secondary and high schools, 35,508; university, 3861. (These figures include Memel, where enrollment was 18,465 in elementary and 5555 in secondary and high schools.) Roman Catholics formed 80.5 per cent of the population at the 1923 census; Protestants and Calvinists, 9.5; Jews, 7.3; Greek Orthodox, 2.5. Protestants comprise 91.7 per cent of population of Memel.

Production. About 77 per cent of the working population is engaged in agriculture and 10 per cent in commerce, industry, and transportation. Arable land in 1937 consisted of 6,697,158 acres, of which forests accounted for 2,645,384 acres. Including Memel but not Vilna, the yields of the chief cereals in 1939 were (in metric tons): Wheat, 251,200 (251,300 in 1938); barley, 246,700 (274,000); rye, 653,400 (623,700); oats, 401,700 (420,000). The potato harvest in 1938 was 77,-830,000 bu.; linseed, 1,161,000 bu.; flax, 56,843,-000 lb. Livestock statistics for the end of 1938 showed 558,000 horses; 1,193,000 cattle; 1,249,000 swine; 619,000 sheep; and 4,851,000 chickens and geese. The sea fisheries in 1938 yielded 1,700,000 lb. of fish valued at 500,000 lits. Total industrial output in 1938 was valued at 480,000,000 lits, chiefly derived from foodstuffs, textiles, lumber, paper (including chemical wood pulp), footwear and clothing, metals, chemicals, and leather. Production of other industries in 1938 was: Matches, 27,625,000 boxes; alcohol, 1,980,557 gal.; sugar, 20,637 metric tons; tobacco, 1,940,268 lb.; beer, 5,868,336 gal.

Foreign Trade. Total imports in 1938 were valued at 223,600,000 lits (212,700,000 in 1937) and exports at 233,200,000 lits (208,300,000 in 1937). The value of the chief 1938 exports was: Butter, 48,458,700 lits; grain, 21,702,500 lits; swine, 21,257,300 lits; bacon, lard, and other cured and salted meats, 25,132,300 lits. See IMPORTS AND EXPORTS.

Finance. Actual budget returns for 1938 showed total receipts of 366,500,000 lits and expenditures of 366,300,000 lits. Original budget estimates for 1939 balanced at 368,800,000, the largest in the country's history. In consequence of the cession of Memel to Germany, these estimates were reduced by some 27,000,000 lits in June, 1939. The public debt on Jan. 1, 1939, totaled 132,-600,000 lits (internal, 52,485,700). The lit exchanged practically at par (\$0.1693) in 1936, 1937, and 1938.

Transportation. Lithuania in 1938 had 1464 miles of railway line; 20,272 miles of roads and highways (1939), and 1606 miles of waterways (see ROADS AND STREETS). During 1938 the railways carried 4,204,748 passengers and 2,376,182 metric tons of freight, the gross receipts totaling 35,230,699 lits. During the same year, 1544 ves-

sels of 910,819 net registered tons entered the port of Memel.

Government. The original, democratic constitution of Aug. 1, 1922, gave way to a promulgated constitution of May 15, 1928, after the Nationalist Union, or Tautininkai party had established single-party rule, similar to fascism, late in 1926. The constitution of Feb. 12, 1938 declares the state a republic; the head of this republic is a President, elected by the Diet for a term of six years. The President in 1939 was Antanas Smetona (re-elected, Nov. 14, 1938). The legislative body consists of a single chamber, the Diet (or Seimas), which has 128 members, elected by popular suffrage according to the system of proportional representation. While the Nationalist Union continued predominant, the Christian Democrat and People's Socialist parties, previously suppressed, gained representation in the cabinet in 1939, to the number of two members each. The President appoints the Premier and, at the latter's recommendation, the other members of the Cabinet. The other high officers of the State, civil, and military, are also appointed by the President.

HISTORY

Lithuania Strives to Survive. Perils repeatedly beset the independence of Lithuania in 1939. The nation had three neighbors that it feared. Germany sought and presently took Memel, which Lithuania had seized 16 years before. Poland held Vilna and with it a great section of territory wrested from Lithuania, which still dreaded the possibility that Poland might take yet more. Russia was feared, both as wanting to bring independent Lithuania back under its authority and as bent on subjecting the land to communism. Too feeble to do otherwise than submit, Lithuania, by good luck and some degree of address ended the year more populous and greater in extent than at its beginning, rid of one difficult neighbor, Poland, and on at least outwardly good terms with the other two.

The Loss of Memel. German forces occupied Memel on March 23; on the same day the Lithuanian Government signed a treaty ceding Memel to the Reich. For details of the negotiations with Germany and of the proceedings in Memel, to effect German annexation, see MEMEL, under *History*. The outcome had been expected as soon to come, even in the later months of 1938. The loss of Memel's port and industries did considerable economic harm to Lithuania. The country needed access to the sea, and it counted on these industries to provide not only a supply of necessary goods to the agricultural inhabitants of Lithuania but also to provide exports toward balancing the country's imports. While the arrangement with Germany allowed Lithuania the use of a free zone in the port of Memel, Lithuania's government wanted a more secure outlet in its own territory.

In order to have such an outlet, the government, even before the actual cession of Memel, provided in January a grant of 2,000,000 lits toward a harbor at Svetoji, a village on the Lithuanian coast, a few miles north of the Memel boundary. It persisted through later months in the plan of creating a port at this point. Efforts were made to establish in Lithuanian territory industries in the manufacture of products of wood, such as had been carried on in Memel.

Recovery of Vilna. Russian troops, as uninvited collaborators with the German forces overrunning Poland, swept through the eastern part of that country in the early autumn (see EUROPEAN

WAR under *The Russian Front*). They occupied Vilna on September 19 (see POLAND under *History*). Russia at this time sought to improve its military position in the lands adjoining the Baltic. It now promptly made a treaty with Lithuania, transferring to that country the city and surrounding district of Vilna and obtaining for Russia the right to set up and maintain military posts in Lithuania, under stipulations similar to those in other treaties of mutual assistance, made by Russia about the same time, with LATVIA and ESTONIA (q.v.). The Lithuanian treaty was signed October 10. Lithuanian troops occupied Vilna on the 27th. Russian forces entered Lithuania before the middle of November; they came to occupy the posts assured by the treaty and located by supplementary convention. Their number as stated in October did not exceed 20,000.

The acquisition of Vilna brought Lithuania 2570 square miles of territory. This increased the extent of the country by one-eighth. Some 457,500 inhabitants, acquired with this territory, added to the population by somewhat less than one-fifth. The gain in territory was more than twice the previous loss by the cession of Memel; gain in population was thrice the loss from the cession of Memel. For all this substantial increase, Lithuania did not get all that she might have asked. The territory delivered by Russia was only a minor part, in extent, of that which Poland had seized from Lithuania. The price that the country paid for the extension of its sovereignty was heavy in peril and prospective inconvenience. Russian troops became a fixture in Lithuanian territory. Russia acquired the right to demand Lithuanian co-operation against any enemy that might move against Russia through this territory. Lithuania had to accept the possibility of becoming a battlefield in the event of war between Russia and some other great power, such as Germany; and not only this—she faced the outlook of contributing her own soldiers to this battlefield. Lithuanian sentiment, moved by the fresh impression of German aggression, looked on the treaty with Russia as a protection sufficient in value to offset these disadvantages. The possibility of the population's becoming indoctrinated with communism through the activity of Russians established in the country by treaty caused only moderate expressions of worry.

Internal Politics. The cabinet underwent two successive changes. On March 27, soon after the cession of Memel, the Mironas Ministry resigned; Gen. Jonas Cernius headed a partly new cabinet, which took office on the following day. On November 21 Antanas Merkys, in turn, became Premier. He made a concession, quite out of the line of the Nationalist Union's prior course, by including in his cabinet two representatives of each of two outlawed popular parties (see above under *Government*). The government provided asylum for 1500 or more Jews expelled by the Germans from the conquered neighboring Polish province of Suwalki. It was reported at the end of March that former Premier Augustinas Voldemaras, Fascist and pro-German leader long in trouble with the Lithuanian authorities, had made an attempt to seize the government and had been defeated. Voldemaras was allowed, however, to return from exile in August.

The fiscal operation of the government had to meet difficulties peculiar to the year. The cession of Memel's busy seaport town employing 10,000 persons or more in manufacture alone, cut off an important source of public revenue. The govern-

ment had to raise the taxes on real estate by one-fourth, toward the end of May, and to increase the rates of other taxation. In October the acquisition of Vilna put the government in need of further funds with which to take care of a newly acquired region somewhat disordered by military occupation and political change. With this region the care of 50,000 Polish refugees who had crowded into Vilna was said to have fallen on the Lithuanian authorities.

LITTLE ENTENTE. A political and military combination formed by Czecho-Slovakia, Rumania and Yugoslavia in 1920-21 for the common defense of their frontiers against Hungarian revisionist aspirations. With the partition of Czecho-Slovakia in 1938 and 1939, there remained of the Little Entente only the agreement between Rumania and Yugoslavia to aid one another if either was attacked by Hungary. See CZECHO-SLOVAKIA, HUNGARY, RUMANIA, and YUGOSLAVIA under *History*; also 1938 YEAR BOOK, p. 421.

LIVESTOCK. Crop and Livestock reports for the United States indicated ample supplies of feed grains from the 1939 harvest and a carry-over of old corn from 1938, which was the largest on record. There was an increase of about 7 to 8 per cent in the numbers of grain-consuming animals on farms as compared with 1938, although livestock increases in some areas were limited by feed shortages. Much of the increase was in hogs. Although smaller than in 1938, the supply of feed for each animal unit was above the pre-drought average. Range and pastures were below normal in the western states, and west of the Missouri River, where there was drought. There were large movements of feeder cattle and feeder lambs from the western states into the central and eastern Corn Belt where feed supplies were plentiful. Supplies of high protein feeds were somewhat larger in 1939-40, and there was an increased crop of the oilseed feeds, especially of soybean and linseed cake. Livestock-feed price ratios were generally favorable to producers during most of 1939.

Increased production in numbers of hogs, cattle, and sheep continued in 1939, and the indications were that the numbers of both cattle and lambs fed in the 1939-40 feeding season were larger than in 1938-39. Drought causing some feed shortages in the far western states curtailed feed production, but in the Corn Belt, feeding of livestock was heavy. With the improved domestic and foreign demand for meat animals in the fall and winter of 1939, slaughter of hogs was particularly heavy.

The rapid increase in swine production, beginning in the spring of 1938, continued through the

fall of this year. The 1939 spring and fall pig crops totaled 84,000,000 head, which was about 13,000,000 head larger than in 1938, bringing hog production for the United States back to predrought levels. Federally inspected slaughter of hogs in 1939 was over 40,000,000 head, as compared with over 35,000,000 head in 1938. Except for a brief rise in September, the trend of pork prices was distinctly downward, and in December prices reached the lowest levels in about five years. Exports of pork and lard were nearly 40 per cent larger than in 1938, reaching approximately 400,000,000 lb., but in the early 1920's the exports amounted to nearly three times this amount.

Cattle numbers have been increasing since 1937 following the reductions made necessary during and after the drought of 1934. Drought in the western range and Great Plains states reduced feed supplies, and the ranges and pastures were short in 1939. In most other regions cattle numbers increased. Cattle numbers were estimated to have increased about 2,000,000 head in the entire country over 1938. Cattle and calves slaughtered under Federal inspection totaled approximately 9 and 5 million head respectively, about 4 per cent less than in 1938.

Movements of stocker and feeder cattle into the Corn Belt states during the summer and fall were nearly 17 per cent larger than last year, and the largest for this season in 15 years. This was accounted for in part by the drought conditions and a strong demand for feeder cattle in the Corn Belt where feed supplies were plentiful. The trend in prices of slaughter cattle was mostly downward during the first half of 1939. Prices of slaughter cattle rose sharply in early September, but declined again in the last quarter of the year.

The 1939 lamb crop of nearly 32,000,000 head was about 1 per cent smaller than the record crop of 1938. As a result of unfavorable range conditions during the summer and fall of 1938, a larger than normal proportion of the lambs was marketed in feeder condition, resulting in an important decrease in the slaughter supplies of lamb available in the spring and summer of 1939. Total Federal inspected slaughter of sheep and lambs in 1939 amounted to about 17,000,000 head, as compared with over 18,000,000 head in 1938. Short feed in the western states caused some reduction in feeding operations, and shipments of feeder lambs into the Corn Belt were larger and earlier during the fall than in 1938. Prices of slaughter lambs generally fluctuated in a narrow range throughout the year, but were higher than in 1938.

MEAT SLAUGHTERED UNDER FEDERAL INSPECTION IN THE UNITED STATES

	Cattle	Calves	Hogs	Sheep, lambs
Number slaughtered:				
1939.....	9,446,303	5,264,058	41,367,825	17,241,037
1938.....	9,776,027	5,491,585	36,186,410	18,168,136
5-year average*.....	10,085,204	5,919,908	34,763,454	17,249,169
Total dressed weight of slaughtered animals:				
1939—lbs.....	4,803,161,000	559,355,000	7,269,300,000	693,945,000
1938—lbs.....	4,798,097,000	581,327,000	6,304,802,000	719,768,000
5-year average*—lbs.....	4,867,511,000	631,055,000	5,868,876,000	681,592,000
Exports:				
1939—lbs.....	15,163,000 ^b	.....	406,815,000	486,000
1938—lbs.....	13,988,000 ^b	.....	300,236,000	493,000
5-year average*—lbs.....	15,108,000 ^b	.....	290,363,000	544,000
Per capita consumption:				
1939—lbs.....	41.29 ^b	.....	52.11	5.28
1938—lbs.....	41.85 ^b	.....	45.85	5.52
5-year average*—lbs.....	43.39 ^b	.....	44.12	5.29

* Average for 1934, 1935, 1936, 1937, 1938. ^b Beef and veal.

Increased tractor competition, declining prices for work stock, inroads of disease in some sections, plus a high death rate from old age, pointed to a continued decrease in the number of horses and mules on farms in 1939. Colt and mule production continued to show a decline with small highspeed single-plow types of tractors replacing horses on small farms.

International Conditions. The quota restrictions on imports of bacon, hams, and pork from non-dominion countries was suspended by the British Government on Sept. 9, 1939. Provisional maximum prices were set up for bacon, ham, and lard, and the United Kingdom requisitioned 50 per cent of the domestic production for distribution to usual import channels on account of the suspension of Danish exports and the negligible shipments from the Baltic countries. Additional supplies from the United States seemed imminent at one time.

Hog numbers in the British Isles were estimated at 5,333,000 head in the summer of 1939, which was about 40 per cent in excess of the average for the five years preceding the World War. Per capita consumption, as a result of the stimulated domestic production, was estimated at 43.9 pounds in 1938-39. Since the collapse of the Pigs Marketing Scheme in 1936, hog numbers and pork production fell off somewhat, but was still larger than prior to the World War.

Notwithstanding efforts of the British Government to promote the domestic hog industry, Great Britain continued to be the principal market for pork products from the United States. About 48 to 50 per cent of the total supplies for consumption were imported during the past three years, compared with 62 per cent in the years of the World War.

Although the United States was once the largest supplier of this market, the United States had a smaller share in the trade in recent years because of the reduced United States production and because of British restrictions on imports of foreign bacon and ham in effect since 1933. The United Kingdom has also followed a policy of promoting imports from British overseas dominions since 1932. Canada had advanced to second place only to Denmark in supplying the British market during the last several years.

Hog numbers in Germany, including Austria and Sudetenland, in June, 1939, were officially estimated at 25,176,000 head, an increase of 8 per cent over 1938. It was also estimated that hogs were being finished in recent years to heavier weights than heretofore. Increased imports of fresh pork and bacon, as much as 107 per cent to 62,000,000 lb., were reported during the first six months of 1939. Much of the fresh pork imports of Germany originated in Poland and Danzig, with Denmark coming second. There were more than 500,000 head of live hogs imported by Germany during the first six months of 1939, in addition to lard imports of 44,000,000 lb. The principal sources of the more recent lard imports were the neighboring countries of Denmark, Hungary, and Yugoslavia, with fair quantities from China.

Cattle imports into the United States during the first part of the year were more than double the imports of previous years, and prior to September, the year's quota of live cattle was exceeded.

Several of the belligerent and neutral countries of Europe established control measures affecting

imports, exports, production, distribution, and prices of pork products to insure an adequate supply of cured pork and lard under the war conditions. In spite of attempts in recent years in the United Kingdom and Germany to promote domestic production and reduce imports, these countries continue to be dependent on large quantities of pork products from other sources.

The United Kingdom imported large quantities of lard and ham from the United States, and bacon from Denmark and Canada, and prior to the war from Netherlands, Poland, Sweden, and the Baltic States. Quotas for the import of bacon in effect since November, 1932, were removed on Sept. 5, 1939, to offset anticipated reductions in the receipts of cured pork from continental countries. More leniency was also given in decisions rendered on Oct. 20, 1939, regarding imports of American ham, bacon, and lard. Maximum prices with periodic changes for all meats sold in the United Kingdom were established for the protection of English consumers.

Exemptions from import duties on all meats were granted by Germany on November 1, but imports and exports were controlled by trading and buying permits. Prices of both imported and exported pork products were regulated and pork and lard were distributed under a rationing system.

Domestic pork production in France was essentially on a self-sufficient basis in peace times. Import duties on fresh and salt pork were suspended until June 30, 1940, but they continued to be subject to French import-license requirements. National and Provisional Committees for the control of prices were established.

Denmark exports large quantities of bacon to the United Kingdom and live hogs and lard to Germany. An agreement was reached that Germany would not interfere with Danish exports to England with the understanding that the United Kingdom would not interfere with Danish imports of feedstuffs, which permits Denmark to supply Germany with live hogs and lard.

Export and production under control were in the main in operation in other neutral pork producing countries, such as Netherlands, Sweden, Italy, Yugoslavia, Rumania, and Bulgaria. Import restrictions on bacon, ham, and pork in Turkey were removed on Sept. 30, 1939.

Research. Among the varied and diverse lines of endeavor to which research was devoted in the studies of the experiment stations and the U.S. Bureau of Animal Industry, attention was given to the increased use and value of roughages in nutrition, and factors which may modify the nutritive value of the feeds. The California Experiment Station found in studying grasslike plants and broadleaved herbs on the San Joaquin Experimental Range, that most of the species showed a continuous and rather orderly decline in crude protein, silica free ash, calcium, phosphorus, and potassium from early growth to plant maturity, while crude fiber increased with the advance of the season. Pasture fertilization was found by the Louisiana Experiment Station to have an important effect on the hay yield and grazing returns from pasturing. Modifications in the composition of the pastures in addition to the increased yield were concluded to involve sound and economical practices. The Illinois Experiment Station found marked and significant differences in the consumption of forage at different

stages of maturity by steers. Feeding a sub-maintenance ration to pregnant ewes during the winter at the Canadian Experiment Station seriously reduced the amount and quality of the wool produced.

Research in livestock breeding, management, nutrition, and feeding was continued in the U.S. Bureau of Animal Industry. In the search for superior germ plasm, one object was improved, intelligence of dogs, giving special attention to herding ability. Progress was made in the development of methods for estimating lignin and indigestible portions of feeds. Improved methods of assaying vitamin E were developed. The deficiency of this vitamin results in fetal resorption during the gestation period. The major benefit from this vitamin was produced by feeding it during the first half of the gestation period. Different kinds of grasses were found to give variable response in the growth level of rats fed corn and grass. Succulent orchard grass and red top gave a better response than Kentucky bluegrass and Canada bluegrass.

Co-operative meat investigations were continued between the Bureau of Animal Industry and other Bureaus and State Agricultural Experiment Stations with much of the work supervised in the Agricultural Research Center at Beltsville, Maryland. In freezing studies, beef frozen at 20° F. was found to be more tender than meat that had not been frozen. In studies at the Mellon Institute for Industrial Research, ultraviolet irradiation applied at high temperature was found to speed up the time required for ripening beef. In a few days beef was made as tender as that which had been ripened normally for weeks.

Studies on the storage of frozen lamb rib cuts at the Agricultural Research Center showed that although cuts frozen and stored at 0° F. for 168 days were satisfactory, the quality decreased when held for 280 days. Evidently the satisfactory storage period at 0° F. is somewhere between 6 and 9 months if palatable meat is to be produced.

The investigations included many phases of production, breeding, and management of cattle, sheep, and swine. Attention was being given at Beltsville to Record of Performance studies with the several classes of meat and fiber-producing animals. Efforts were made to develop tests of meat animals that would indicate not only producing ability but also the quality of the carcass produced.

Artificial insemination methods with sheep and

horses were carried forward and semen was successfully shipped from Beltsville, Maryland, to Miles City, Montana, and Dubois, Idaho, and several lambs were produced even though sires never saw the dams. See VETERINARY MEDICINE.

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GEORGE HAINES.

LIVING COSTS AND STANDARDS.

During the first half of 1939, the cost of living in the United States showed relatively slight change from the situation prevailing during 1938. According to the record prepared by the Bureau of Labor Statistics, a decline of nine-tenths of 1 per cent was registered during the first quarter of the year and a further decline of three-tenths of 1 per cent during the second quarter. Living costs on June 15, 1939, were estimated to be 1.9 per cent lower than they had been on the same date of 1938.

With the outbreak of the European War in September, a sharp increase in the prices of necessities was anticipated by numbers of the buying public who recalled the experience of the previous war. Such an increase did not appear to have materialized to a serious extent, however, by the end of the year. Secretary of Commerce Hopkins, in a year-end statement on conditions in the United States, made the following comment on the relation of the war to domestic living costs:

"Commodity prices, which had inclined to weakness in the first two-thirds of the year, advanced under the impetus of concentrated demand in September. Prices of farm products and foods rose substantially with benefit to purchasing power in rural areas. Industrial raw materials were bid up rapidly and there soon followed price

TABLE 1: BUREAU OF LABOR STATISTICS INDEXES OF COST OF GOODS PURCHASED BY WAGE EARNERS AND LOWER-SALARIED WORKERS IN 32 LARGE CITIES COMBINED.
[Average 1923-25 = 100]

Year	All items	Food ¹	Clothing	Rent	Fuel and light	House-furnishing goods	Miscellaneous
1913.....	57.4	63.1	55.7	61.4	53.9	47.7	50.1
1918.....	87.2	106.2	102.5	63.2	73.3	85.9	76.7
1923.....	99.0	97.9	101.2	97.5	100.3	101.8	99.3
1928.....	99.5	103.3	93.7	96.5	98.9	91.3	102.3
1933.....	75.8	66.4	70.9	67.2	87.4	68.0	97.0
1934.....	78.6	74.1	77.5	62.9	88.6	74.9	96.7
1935.....	80.7	80.5	77.9	62.9	87.5	76.4	96.7
1936.....	81.6	82.1	78.7	64.2	87.5	77.8	96.5
1937.....	84.3	85.1	82.4	67.4	86.6	84.9	97.8
1938.....	83.0	78.9	82.3	69.5	87.0	84.5	98.6
March 15, 1939..	82.0	76.4	81.1	69.6	88.4	83.2	98.5
June 15, 1939..	81.7	76.3	80.9	69.5	85.4	83.2	98.5
September 15, 1939	82.7	79.0	81.0	69.5	86.1	83.5	98.7
December 15, 1939.	82.2	76.9	81.7	69.5	87.2	84.6	98.4

¹ Covers 51 cities since June, 1920.

advances over a widening range of semifinished and finished goods which gave promise for a time of exercising adverse effects upon consumer purchasing.

"Prompt realization of this fact, and of the extremes to which initial price rises went, tended to halt this adverse development, though it did not entirely prevent all of its manifestations. However, retail food prices and other living costs now are not much changed from the position a year ago and, of course, aggregate purchasing power is considerably higher."

The Cost of Living Index compiled by the U. S. Bureau of Labor Statistics is set forth in Table 1. It is based on reports from 32 large cities with the period 1923-25 taken as an average, or equivalent to 100.

Budget Studies. The division of the Works Progress Administration has evolved a "maintenance budget" for the typical four-person manual worker's family in the United States. This budget affords more than a "minimum of subsistence" to the family, although it is not so liberal as the skilled worker may hope to obtain. In December, 1938, in 31 cities surveyed by the Bureau of Labor Statistics, the average cost of the budget was \$1316 a year, ranging from \$1129 in Mobile, Ala., to \$1440 in San Francisco. This average cost was \$56 more than the average annual cost in 1935, the year in which it was first estimated.

A cost budget for single working women in San Francisco was compiled by the Heller Committee of the University of California, based on San Francisco prices for March, 1938. Total annual living costs for the women in low-skilled, clerical, or sales occupations were put at \$1105, including \$22 in payroll taxes. The largest items were room and board, \$561; clothing, \$157; leisure-time activities, \$85; carfare and savings, \$50 each; care of the person and medical services, \$41 each. The New York State Department of Labor computes annually the cost of "adequate maintenance and protection of health" for working women. The figures arrived at for 1938 were \$1059 for a woman living as a member of a family and \$1160 for a woman living alone.

Expenditures for Maintenance. In its effort to determine what the family of modest means actually spends on living costs, the U. S.

Department of Labor released reports on two extensive surveys during 1939. From a report of 14,469 families dwelling in 42 cities and earning an average of approximately \$1500 annually, it was revealed that an average of \$508 a year is spent for food, \$367 for housing, heat and light, \$160 for clothing, and \$87 on an automobile. An exhaustive study of family living in the city of Chicago covered 2711 families having a median income of \$1860. This survey pointed out that all family incomes in Chicago aggregated \$1,327,000,000 in 1935-36; about one-third of the families earned under \$1,000 while two-fifths had incomes between \$1000 and \$2000. It is of particular interest to note that the families earning less than \$1750 a year operated at a total net deficit. The results of the survey were tabulated in part as in Table 2.

In a study of United States consumer expenditures for 1935-36, the National Resources Committee considered as a whole the 29,400,300 families of two or more persons and the 10,058,000 men and women living alone or as lodgers or servants, thus including over 98 per cent of the total population. The total income of these "consumer units" was \$59,300,000,000, of which about 50 billion, or 85 per cent was spent for current consumption. Of the remainder, nearly 4 per cent was used for gifts, 1½ per cent for taxes, and 10 per cent was saved. Of the current expenditures, food claimed the largest share, 29 per cent of the total income. Housing claimed 16 per cent; household operation and clothing about 9 per cent each; automobile expenditures 6½ per cent; and medical care, 4 per cent. Less than 1 per cent was spent for education.

Food Prices. In all moderate-income budgets the leading item is that of food, toward which as much as a third or even half of the family income is usually devoted. For that reason the trend in food prices is particularly pertinent to the subject of living costs. The table at the top of page 448 lists some 50 important articles of food with the actual retail price in cents for Nov. 14, 1939, together with the price on the corresponding date in 1938. These items are selected from a list published in the *Monthly Labor Review* of January, 1940, the prices representing an average of the reports from 51 large cities.

TABLE 2. DISTRIBUTION OF FAMILY INCOME IN CHICAGO FAMILIES¹

Income class	Average income	Per cent of total income represented by—								Net surplus ¹
		Expenditures for current family living								
		Total	Food	Home maintenance	Clothing and personal care	Transportation	Medical care	Contributions and personal taxes	Other items	
\$500-\$749 ..	\$684	130.6	56.3	50.3	9.4	3.8	3.5	1.5	5.8	
\$750-\$999 ..	908	114.1	46.3	41.5	10.4	4.3	5.0	1.1	5.5	
\$1,000-\$1,249 ..	1,132	106.5	41.4	38.1	10.4	5.7	4.0	1.4	5.5	
\$1,250-\$1,499 ..	1,369	102.8	39.2	35.8	10.0	5.5	4.2	1.8	6.3	
\$1,500-\$1,749 ..	1,621	101.0	36.6	34.0	10.5	6.4	4.8	2.0	6.7	
\$1,750-\$1,999 ..	1,875	98.2	33.3	33.5	10.7	7.5	4.2	2.3	6.7	2.2
\$2,000-\$2,249 ..	2,113	96.4	31.4	31.9	11.1	8.3	4.4	2.7	6.6	4.1
\$2,250-\$2,499 ..	2,372	96.2	32.2	31.4	11.0	7.1	4.7	2.7	7.1	4.1
\$2,500-\$2,999 ..	2,735	93.5	29.1	30.0	11.6	8.4	4.3	3.0	7.1	6.8
\$3,000-\$3,499 ..	3,238	88.3	26.9	27.4	10.7	8.0	4.0	3.9	7.4	11.5
\$3,500-\$3,999 ..	3,731	86.9	25.7	27.6	11.8	7.8	3.9	3.6	6.5	13.2
\$4,000-\$4,999 ..	4,453	87.1	24.2	25.8	11.6	9.0	4.4	5.5	6.6	11.2
\$5,000-\$7,499 ..	5,966	80.1	19.3	25.2	10.1	8.5	3.9	5.8	7.3	19.8
\$7,500-\$9,999 ..	8,642	80.9	16.9	25.0	12.4	8.5	3.3	6.7	8.1	18.5
\$10,000 and over	16,277	64.8	11.0	19.1	8.8	6.2	1.5	11.8	6.4	34.7

¹Includes the estimated value of housing, food, fuel, etc., obtained without expense.

AVERAGE RETAIL FOOD PRICES

Article of food	Nov. 15, 1938 (Cents)	Nov. 14, 1939* (Cents)
Wheat flour . . . 10 lb. . . .	36.8	42.4
Macaroni . . . lb.	14.6	14.4
Corn meal . . . lb.	4.6	4.5
Rice . . . lb.	7.6	8.1
White bread . . . lb.	8.2	7.9
Whole-wheat bread . lb.	9.3	9.1
Round steak . . . lb.	35.2	35.1
Rib roast (beef) . lb.	29.7	29.1
Chuck roast . . . lb.	23.3	23.2
Veal cutlets . . . lb.	42.7	42.2
Pork chops . . . lb.	31.5	28.3
Sliced bacon . . . lb.	35.9	30.4
Whole ham . . . lb.	28.8	26.2
Leg of lamb . . . lb.	27.3	25.6
Lamb rib chops . lb.	33.5	34.4
Roasting chickens. lb.	29.4	27.7
Pink salmon . . . 16-oz can	12.6	14.7
Butter . . . lb.	33.2	35.6
Cheese . . . lb.	25.2	25.6
Fresh milk (delivered) . . . qt.	12.6	12.8
Fresh milk (store) . qt.	11.5	11.8
Eggs . . . doz.	44.5	39.6
Apples . . . lb.	4.9	4.0
Bananas . . . lb.	6.2	6.3
Oranges . . . doz.	26.2	28.8
Green beans . . . lb.	9.8	11.7
Cabbage . . . lb.	2.5	3.0
Carrots . . . bunch	5.5	5.5
Lettuce . . . head	8.1	9.0
Onions . . . lb.	3.7	3.1
Potatoes . . . 15 lb	29.0	34.9
Spinach . . . lb.	6.1	5.9
Sweet potatoes . lb.	3.4	3.2
Canned peaches . #2½ can . . .	17.2	16.9
Canned pineapple . #2½ can . . .	21.5	21.2
Canned corn . . #2 can	11.0	10.5
Canned peas . . #2 can	14.3	13.9
Canned tomatoes #2 can	8.6	8.6
Dried prunes . . lb.	9.1	9.3
Dried navy beans lb.	6.1	6.9
Coffee . . . lb.	22.9	22.2
Tea . . . ½ lb	17.8	17.5
Cocoa . . . 8 oz.	8.6	8.9
Lard . . . lb.	12.4	10.9
Mayonnaise . . . ½ pint	17.3	16.6
Oleomargarine . lb.	16.9	16.5
Peanut butter . lb.	18.4	17.9
Sugar . . . 10 lb.	51.6	58.2
Corn sirup . . . 24 oz.	13.9	13.5
Molasses . . . 18 oz.	13.6	13.4

* Preliminary.

Comparison of North and South. One of the most interesting surveys in the field of living costs in 1939 was one prepared by the U.S. Bureau of Labor Statistics at the request of the Wage and Hour Division to supply information needed in the administration of the Fair Labor Standards Act of 1937. The object of the inquiry was a comparison of the cost required to purchase the same level of well-being for wage earners in the North and in the South. As a basis of comparison, five cities with populations over 10,000 and under 25,000 were chosen in each region. Because of the differences in consumption habits between northerners and southerners, two separate comparisons were made, one based upon typical northern consumption and the other upon typical southern consumption. From the average of the two comparisons, the following general conclusions were reached:

The cost of living in the 5 small southern cities surveyed . . . was found to be 3.1 per cent lower on the average than in the 5 northern cities of the same size. Food prices were virtually the same, and lower housing and fuel costs in the 5 southern cities were partially offset by higher prices for clothing, furniture, furnishings and equipment, and miscellaneous items. It is of interest to note that the difference of 3.1 per cent in living costs between the northern cities as a group and the southern cities as a group is smaller than the differences between some of the cities in the same region. The lowest as well as the highest cost in the 10 cities surveyed was found in the northern group.

The cost of the goods consumed by the average wage earner's family in the North was found to be \$1387; the same goods would have cost \$1374 (1 per cent less) if bought in the South. The cost of goods consumed by the average wage earner's family in the South was found to be \$1075, and those goods would have cost \$1136 in the North. For food, the average northern family spent \$456 and the average southern family \$350. However, the northerner's diet would cost 3.9 per cent more in the South, and the southerner's diet would cost 3.2 per cent more in the North; therefore, no important difference is indicated as to the actual price of the food consumed.

Expenditures for housing averaged \$226 for

TABLE 3: AVERAGE INCOME AND CONSUMPTION EXPENDITURES BY WAGE EARNERS' FAMILIES WITH PERCENTAGE OF EXPENDITURE ON CHIEF GROUPS

(Statistics of the International Labor Organization, 1939)

Country	Date of inquiry	Average annual income	Average annual expenditure	Food	Housing ²	Clothing ⁴
Germany ¹	1937	Mk. 2,163.06	Mk. 1,901.32	51.2	24.5	10.2
Austria	1934	Sch. 3,093.32	Sch. 3,043.87	50.3	16.0	9.8
Argentina	1935		Pesos 1,970.28	54.9	22.8	10.3
Belgium	1928-29	Fr. 18,164	Fr. 19,597.91	59.6	14.3	15.8
Brazil	1934		Milreis 4,466.400	48.3	25.4	10.1
Bulgaria	1927-28	Leva 41,842	Leva 41,611	50.2	22.9	12.8
Canada ^{1,2}	1937-38	\$ 1,443	\$ 1,389	31.2	33.8	11.5
China (Shanghai)	1929-30	\$ 416.5	\$ 447.54	55.8	16.4	7.4
Colombia	1936	Pesos 616.8	Pesos 568.32	63.9	24.1	1.3
Denmark (Copenhagen)	1931	Kr. 4,514	Kr. 4,226.22	37.5	25.1	11.3
Estonia	1937-38	Kr. 1,379.51	" 1,353.99	44.0	21.1	15.6
United States (New York City)	1934-36		\$ 1,824.29	36.7	28.6	11.1
Finland	1928	Mk. 25,031	Mk. 24,078	50.5	21.7	12.2
Hungary	1929	Pengö 2,851.04	Pengö 2,725.65	52.9	18.0	10.2
India (Ahmedabad)	1933-35	Rs. 555/12	Rs. 488/14	49.3	18.0	9.1
Japan	1936-37	Yen 1,083.84	Yen 940.56	38.2	20.5	11.3
Latvia	1936-37	Lats 1,973.56	Lats 1,823.20	40.0	23.8	12.0
Mexico	1934	Pesos 1,074.84	Pesos 1,142	56.4	19.2	6.6
Norway	1927-28	Kr. 4,342.94	Kr. 3,828.86	47.1	21.1	13.4
New Zealand	1930			29.5	29.6	12.6
Netherlands	1935-36		Fl. 1,498.69	40.1	25.2	9.0
Poland	1929	Zl. 3,497.00	Zl. 3,410.02	57.2	12.5	17.3
Sweden	1933	Kr. 3,493.4	Kr. 3,147.30	40.2	24.8	14.0
Switzerland (Zurich)	1936-37	Fr. 4,923.37	Fr. 4,646.54	35.2	32.3	9.6
Czecho-Slovakia	1931-32	Kč. 15,098.59	Kč. 14,610.88	54.7	16.2	13.4
Union of S. Africa	1936	£363 6s.	£315 10s.	32.7	30.8	10.3

¹ Provisional figures. ² British families. ³ Includes rent, furniture, upkeep and equipment, fuel and light. ⁴ Generally includes laundry.

northern families and \$165 for southern families. Local influences on housing costs, however, are apparently more important than any regional factors. Fuel provided the greatest percentage difference of expenditures in the two regions, since the southerners required only half as many thermal units as the northerners. Bituminous coal prices ranged from \$8.31 to \$9 in the South and from \$5.95 to \$10.24 in the North; electricity from 5 to 9 cents per kilowatt-hour in the South and from 4 to 8 cents in the North. The low prices of natural gas in some cities was a variable factor. The northern family spent \$125 for clothes and the southern family \$115; clothing costs were about 2 per cent higher in the South whether calculated on the basis of northern or of southern consumption. Prices for certain articles showed marked variations between regions.

Diets of City Workers. The Department of Agriculture concluded in 1939 a study of diet from 4000 records covering non-relief families earning \$500 to \$2000 a year. The majority of these families spent between 25 and 40 per cent of their income on food, which was almost invariably the largest single item on their budget. Families with average per capita incomes of \$5 to \$6 per week spent an average of \$1.25 to \$1.87 for food, while with incomes of \$8 to \$10, the expenditure was \$2.50 to \$3.12. The diets of fully half the families were found to be in need of improvement according to present-day standards. Quantities of protein and iron were generally sufficient, but not more than half of the families received enough calcium, vitamin B, and vitamin C, and four families out of five received insufficient amounts of vitamin A. At the retail price levels of 1935, an adequate diet could be purchased for \$1.90 to \$2.75 per person, according to the region in which he lived. However, only 30 per cent of the families spending that amount selected good diets. Milk products, fruits, and vegetables were the most serious deficiencies.

Foreign Statistics. The International Labor Office in Geneva collects and correlates information from various countries as to family living expenditures and costs. With few exceptions, these statistics are communicated to the Office by governments or are taken from official publications. It is pointed out, however, that statistical methods vary somewhat among governments and that the figures are not always exactly comparable. Table 3 shows income and expenditures by the average wage earner's family in a number of countries, as reported in the *Year-Book of Labour Statistics, 1939*. (For the value of foreign currencies, see the table under INTERNATIONAL BANKING AND FINANCE.)

LOANS, COMMERCIAL. See BANKS AND BANKING under *Bank Portfolio Policies*.

LOMBOK. See NETHERLANDS INDIES.

LONDON. See ART SALES; GREAT BRITAIN.

LOS ANGELES. See CALIFORNIA; WATERWORKS AND WATER PURIFICATION.

LOUISIANA. Area and Population. Area, 48,506 square miles; included (1930) water, 3097 square miles. Population: Apr. 1, 1930 (census), 2,101,593; July 1, 1937 (Federal estimate), 2,132,000; 1920 (census), 1,798,509. New Orleans had (1930) 458,762 inhabitants; Baton Rouge, the capital, 30,729.

Agriculture. Louisiana harvested, in 1939, 4,193,000 acres of principal crops. Cotton, on 1,130,000 acres, made 750,000 bales (\$33,000,000 in estimated value on the farm); sugar cane (ex-

clusive of cane for sirup or seed), on 238,000 acres, 5,069,000 tons (\$14,193,000); corn, on 1,555,000 acres, 23,325,000 bu. (\$14,928,000); rice, 479,000 acres, 20,597,000 bu. (\$16,066,000); sweet potatoes, 95,000 acres, 6,935,000 bu. (\$4,161,000); tame hay, 321,000 acres, 406,000 tons (\$4,304,000); potatoes, 39,000 acres, 2,106,000 bu. (\$1,580,000).

Manufacturing. Manufacturers' establishments in Louisiana numbered 1684 in 1937 (in 1935, 1611); they employed 76,057 wage-earners (in 1935, 61,664); paid them \$50,203,023 (in 1935, \$44,981,789); produced goods to the value of \$580,839,828 (in 1935, \$433,519,717), and by the processes of manufacture contributed to that value \$199,855,726 (in 1935, \$142,943,088). The refining of petroleum yielded the highest total of products among the classified industrial groups; the refineries' output totaled, in value, \$122,151,945 for 1937. Refineries of cane sugar attained a production of \$75,463,193. Manufactured from cottonseed, a total of oil, cake, and meal valued at \$12,702,413 was produced. The manufacture of lumber and timber products, totaling \$44,496,047, was supplemented by lesser but substantial totals of wood pulp, paper, and products of planing mills. The output of manufactories in New Orleans totaled, for 1937, \$126,508,215.

Mineral Production. According to the Bureau of Mines' current issue of its *Minerals Year Book*, Louisiana produced in 1937 native minerals having a total value of \$182,118,905. Petroleum provided three-fifths of the amount, natural gas three-tenths, and sulphur much of the rest. The output of petroleum increased to about 94,812,000 barrels for 1938, from 90,924,000 barrels, in value \$110,300,000, for 1937. The Cross Lake field, near Shreveport was discovered in 1938, but exploratory drilling for petroleum concentrated chiefly on the coastal area, where wells of exceptional depth were drilled, notably one producing well in the newly discovered Dulac field, which went down 13,260 feet, the greatest distance reached in successful drilling up to 1939. The production of natural gas dropped by about 14 per cent, to 260 billion cu. ft. for 1938, from 315,301 million cu. ft., in value \$53,908,000, for 1937. The output of sulphur, responsive to the pace of industry, slackened in 1938, and production in Louisiana diminished to 328,405 long tons, from 429,602 tons, in value \$7,705,448, for 1937. Salt was produced in 1938 to the total quantity of 958,186 short tons and to the value of \$2,775,384.

Political and Other Events. Suddenly, with little warning the seemingly smooth-running organization of the successors to the power of the late Senator Huey Long flew to pieces in July and brought to grief Governor Leche, Pres. James Monroe Smith of the State University, political leader Seymour Weiss, and many of their associates. The first intimation of change was the announcement, June 22, made by robust young Governor Leche, that he would resign in a few days, because of ill health. Leche next announced (June 24) that President Smith of Louisiana State University had resigned after the discovery of financial irregularities there. Leche himself resigned on June 26, and Lt.-Gov. Earl K. Long succeeded him in office; on the same day a firm of brokers reported that President Smith had attempted to put in their hands bonds of the Louisiana State University to cover indebtedness incurred on a speculative account;

on June 27 President Smith and his wife were missing, and he was accused of having borrowed money from three banks on the security of about \$500,000 of the University's bonds, now found worthless as not having been properly issued; surrendering in Canada, Smith was brought back to Baton Rouge (July 4) to face a State indictment for embezzlement of the University's funds; on July 18 Smith, Weiss and over a score of others were named in Federal indictments charging use of the mails to defraud the University in a transaction involving the University's purchase of the Bienville Hotel at New Orleans. William G. Rankin, the State's Conservation Commissioner, resigned (July 24) at Governor Long's request, in the midst of examination of the conduct of his office as to violation of the State's restrictions on the production of petroleum and seeming discrepancies in accounts covering the building of Geology Hall on the University's grounds. On August 7 ex-Governor Leche was indicted, with Weiss, an employee of the Standard Oil Company of Louisiana, and two other persons in the petroleum business, in Federal indictments charging use of the mails in fraudulent dealings involving transfers of substantial sums in cash and the illicit handling of petroleum in excess of the State's restrictions, in 1936. Director James A. Shaw of the mineral division of the Department of Conservation killed himself, August 20, while waiting to give testimony as to these charges. Weiss and President Smith were convicted in the Hotel Bienville case, September 14, and were sentenced to serve for 30 months in Federal prison and pay fines of \$1000; the trial of Weiss and ex-Governor Leche was set for a date in January, 1940.

The net result of the events of the three months was that Leche was out of office and awaiting trial; his political ally, Weiss, and the head of the State University, Smith, were under prison sentence; the Department of Conservation was under suspicion of having aided lucrative evasion of its own rules for the proration of petroleum; and the plundering of the resources of the State University had been brought to light. Mayor Robert S. Maestri of New Orleans and his political friend Gov. Earl K. Long remained untouched; Maestri had been Commissioner of Conservation before becoming Mayor of New Orleans in 1936, but no disclosures as to the corrupt favors for producers of petroleum in past years brought in his name, while on the contrary, he had won subsequent approval in well-respected quarters for capable performance of the Mayoral duties in New Orleans. Smith, pleading guilty to one of the many State charges against him—a charge of forgery—was sentenced, November 13, to prison for 8 years. He tried to kill himself in his cell on the 16th by severing an artery; his life was saved and no further prosecutions were pressed against him in 1939.

Gov. Earl K. Long and Mayor Maestri now remained the chief survivors of the overthrow. Long, however, had soon to seek re-election as Governor at the State Democratic primary (virtually the electing poll under the single-party system in the State) in January, 1940; and the rapid prosecutions of officials by the Federal authorities had stirred into life appetite for prosecutions and inquiries under the State's own authority, qualified to enter the subject more deeply than at the few points where the incidental application of the Federal law against evading income

taxes or using the mails to defraud had enabled the authorities at Washington to proceed.

The action of two grand juries, one in New Orleans and the other in East Baton Rouge Parish, strengthened demand among citizens for effectual investigation of matters and persons under suspicion. On the grand jury at New Orleans, two members tried, October 9, to read before the Court a petition, signed by seven in all, for the removal of the District Attorney (C. A. Byrne), charged with obstructing inquiry; though the petition was rejected and its two sponsors were arrested by Court order, there followed (October 10) a mass meeting and a second petition for the District Attorney's removal. The grand jury of East Baton Rouge took the course (October 9) of adjourning before the opening of the session of court to which it was to have reported, thus expressing dissatisfaction with the conduct of matters before it by Attorney-General Ellison and the local District Attorney. There followed Ellison's summary removal by Governor Long (October 23) on the ground, quite foreign to immediate issues, that Ellison was holding office illegally. Long appointed a new Attorney-General, L. P. Gardner; individuals then brought suit, October 27, for a court order to compel the District Attorney of Baton Rouge to start court proceedings for the removal of both Governor Long and Gardner.

Officers. Louisiana's chief officers, serving in 1939, were: Governor, Richard W. Leche (Dem., resigned June 26); Lieutenant-Governor and (by succession June 26) Governor, Earl K. Long (Dem.); Secretary of State, E. A. Conway; Treasurer, A. P. Tugwell; Auditor, L. B. Baynard; Attorney-General, David M. Ellison; Superintendent of Education, T. H. Harris.

LOUISIANA STATE UNIVERSITY.

See LOUISIANA.

LOYALTY ISLANDS. See NEW CALEDONIA.

LÜBECK. See GERMANY.

LUMBER. See FORESTRY.

LUNAR AIR-TIDE. See METEOROLOGY.

LUNG DISEASES. See MEDICINE AND SURGERY.

LUTHERAN CHURCH. The Evangelical Lutheran Church is found in all parts of the world, preaching the Gospel in many different languages. In America alone about twenty-five languages are used in the work of the Church. Luther's Small Catechism is translated into 160 languages. Its manifold character is expressed in various forms of organizations and worship. Doctrinally the Lutheran Church receives and holds the canonical books of the Old and New Testaments as the inspired Word of God, therefore the only infallible rule and norm of faith and life. It accepts the ecumenical creeds and regards the unaltered Augsburg Confession as the correct exposition of the doctrines taught in the Word of God.

In America the Lutheran Church is organized on democratic lines in synods and national church bodies. There are seventeen individual Lutheran Church organizations in the United States. All of them except a few smaller ones have affiliations by which they co-operate with the larger bodies, so that all but 3 per cent are accounted for in the three major divisions—the United Lutheran Church in America, the American Lutheran Conference, and the Synodical Conference. There continues to be a definite progress toward greater

co-operation and solidarity. Several of the major bodies have had commissions at work looking toward a better understanding and ultimate unification. An agreement in doctrine, which was reached by the commissions of the United Lutheran Church in America and the American Lutheran Church in February, 1939, will be submitted to the biennial conventions of these bodies in 1940 for consideration and approval.

Along with this trend toward greater solidarity there was a corresponding movement toward deeper spirituality among all the bodies. Missionary work both at home and abroad received greater emphasis and definite steps were taken to enlist the lay membership in an extensive program of evangelism. Similarly marked progress is noted in the fields of education and stewardship.

Special attention and interest was manifested in the sphere of Christian Welfare in 1939. At the urgent request of the Inner Mission and welfare workers throughout the Church the National Lutheran Council, a common agency of eight Lutheran bodies, established a new department of service, known as National Lutheran Welfare, at 39 East 35th Street, New York City. Dr. C. E. Krumbholz, formerly Executive Secretary of the Board of Social Missions of the United Lutheran Church in America, assumed the direction of the department, June 1, 1939. This service will act as a central clearing bureau for the more than 300 Lutheran Welfare societies in the United States and endeavor to co-ordinate these far-flung activities.

Due to the difficulty of securing an adequate representation on account of the hostilities in Europe the proposed meeting of the Lutheran World Convention in Philadelphia in May, 1940 was called off. A smaller meeting of Lutheran leaders has been suggested in Europe instead. For statistics, see RELIGIOUS ORGANIZATIONS.

LUXEMBURG, lük'scm-bürg. A grand duchy bounded by Germany, France, and Belgium. Area, 999 square miles; population (1938 estimate), 301,000, most of whom profess the Roman Catholic faith. The people speak a Germanic dialect (French is their secondary language). Chief towns: Luxembourg (capital), 57,740 inhabitants; Esch-Alzette, the mining center, 27,517; Diffendange, 15,945; Dudelange, 13,572. During 1937 there were 4514 births, 3555 deaths, and 2486 marriages.

Production and Trade. Agricultural is the occupation of some 32 per cent of the population, the chief crops being oats (41,600 metric tons in 1938) and potatoes (285,600 metric tons in 1938). On January 1, 1938, the country had 108,572 cattle, 147,365 swine, 17,307 horses, 6955 sheep, and 3514 goats. The mining and metallurgical industries are important, the production figures (in metric tons) for 1938 being iron ore (1,450,000, metal content), pig iron and ferroalloys (1,551,000), steel (1,437,000), basic slag (320,000). Seven steelworks and 35 blast furnaces were in operation during 1937. Statistics of trade are included in those of Belgium by reason of the Belgo-Luxembourg Economic Union which came into force on May 1, 1922. In 1938 there were 2558 miles of highways, and 318 miles of railway lines open to traffic.

Government. For 1938, revenue was estimated at 344,356,518 francs and expenditure at 384,458,634 francs. Public debt (Dec. 31, 1937), 697,164,547 francs (Luxembourg franc equals 1.25 Belgian franc). Executive power and the right

to organize the government rest with the Grand Duchess. Legislative power rests with the Grand Duchess and with the Chamber of Deputies (lower chamber) of 55 members (in 1937, 25 Catholics, 18 Laborites, 6 Radical Liberals, 3 Independents, 3 Democrats) elected for a term of 6 years (one-half being renewed every 3 years) by universal suffrage. There is a Council of State (upper house) consisting of 15 members appointed for life by the sovereign. Ruler, Grand Duchess Charlotte (succeeded Jan. 9, 1919); Minister of State, Pierre Dupong (Catholic).

History. The Grand Duchy found itself in a difficult position because of the outbreak of war in Europe during September but, in view of numerous treaties in which Germany, France, and Great Britain are parties and the renewed assurances, given by the belligerents following the start of the current war, that Luxembourg's neutral rights would be fully respected, the country hoped to remain at peace despite the severe economic problems involved. In November the Minister of Finance reported an estimated budget deficit of 16,401,333 francs in 1940 compared with a surplus of 10,000,000 in 1938, 5,000,000 in 1937, and 10,000,000 in 1936.

LYNCHING. Although several anti-lynching bills were introduced before the 76th Congress, none reached a vote, largely because of the open declaration by Senator Connally and other southern Senators that any effort to revive such legislation would result in a prolonged filibuster like that of the preceding year. Senators Wagner, Van Nuys, and Capper introduced on January 19 a bill which retained the main features of the Wagner-Van Nuys bill of 1937; it provided for criminal prosecution of State officers guilty of negligence in protecting persons against lynching mobs and made counties in which lynchings occur subject to civil suits for damage. The new bill, however, included "gangster killings" in the definition of lynching and placed the burden of proof on the party bringing suit rather than on the State officers accused of negligence. In an appended statement the authors of the bill pointed out that, although seven lynchings occurred in the United States in 1938, not one case resulted in conviction, prosecution, or even arrest. Senator Barbour introduced a similar bill which, however, would impose fines against counties only where "wilful" neglect occurs. On July 28, Representative Gavan disclosed that he had obtained the necessary signatures to his petition to force an anti-lynching bill to the floor of the House, but that he would not call the bill up until the next session.

According to statistics compiled by the Tuskegee (Ala.) Institute, three persons were lynched in the United States during 1939, two Negroes and one white. The white man was Miles W. Brown of Panama City, Fla., convicted of killing a store owner, Roy Van Kleeck, for whom he had formerly worked. Brown claimed that he had committed the murder in self defense, in an altercation over his dismissal from the store, but he was found with some \$1300 which it was charged he had taken from Van Kleeck. Outraged because the jury recommended mercy, making a life sentence mandatory, four or five masked men overpowered the jailor at three a.m. on April 1 and seized Brown, whom they shot and left on a country roadside.

Of the two Negroes, one was lynched in Florida and the other in Mississippi. In one case, the charge was the killing of a boy in an automobile

accident and, in the other, an altercation with a man. The Tuskegee Institute reported 18 instances, involving 20 Negroes and five white men, in which lynching was prevented by officers of the law during the year. The three lynchings which occurred brought the total since 1882 to 1292.

LYONS, Rt. Hon. Joseph Aloysius. An Australian politician, died at Sydney, Apr. 7, 1939. Born at Stanley, Tasmania, Sept. 15, 1879, he was educated at the University of Tasmania and subsequently entered the department of education there, becoming master of one of the largest Tasmanian schools. In 1909 he entered politics as a Labor candidate for the Tasmanian Assembly. Elected, he served in that body until 1929, acting as treasurer, minister of education, and of railways during 1914-16 and becoming premier of that State in 1923. He served as minister for railways (1923-24) and for mines (1925-28).

After 1929, Lyons was actively associated with Commonwealth politics, being elected to the Australian Parliament. He served as postmaster-general and minister for public works (1929-31) and as acting treasurer (1930-31). In 1931 he broke with the Labor Government over its inflationary policy, and founded the United Australia Party, leading the Opposition to the Government from May to December, 1931. In the elections of Dec. 19, 1931, the new party was swept into office and a few days later the ministry of Mr. Scullin resigned. Called to form a new cabinet, Lyons accepted the Premiership and also assumed the office of Treasurer (held until 1935), and began his program of financial retrenchment and full payment of all governmental obligations. At the end of his first year in office, the budget was balanced, the trade balance improved, and foreign obligations were met or refunded. This was not done without a severe political struggle, and in 1934 the United Australian Party was retained in office, and again in the elections of 1937 the people showed their confidence in the government. Perhaps the most significant development of Mr. Lyons' period of office was the country's remarkable recovery from the grave economic and financial difficulties experienced after 1929. At various times throughout his premiership, Mr. Lyons held the posts of minister of commerce (1932), minister for health and reparation (1935-36), vice-president of the Executive Council (1935-37), and minister for defence (1937). For developments in 1939, see AUSTRALIA under *History*.

Made a Privy Councillor in 1932 and a Companion of Honor in 1936, Mr. Lyons represented Australia at the jubilee celebration of the coronation of George V (1935) and at the coronation of George VI (1937), and was the leader of the Australian delegation to discuss Imperial Trade Questions at London (1935) and to the Imperial Conference (1937). Edinburgh, London, and Aberdeen conferred the freedom of the city upon him.

MACAO, ma-kä'ô. A colony of Portugal in South China. Total area, including the nearby islands of Taipa and Colôane, 6 square miles; population (1938 estimate), 170,000, compared with 157,175 in 1927 census, of whom 3846 were Portuguese, 152,738 were Chinese, and 152,738 were of various nationalities. Trade, chiefly transit, is in the hands of Chinese. In 1938 there were 68 miles of roads. Imports were valued at

£983,258 in 1936; exports at £571,061. (British pound averaged \$4.9709 during 1936). In 1937, 2268 vessels entered and cleared the ports. The budget for 1938 was estimated to balance at 37,-787,517 escudos (escudo averaged \$0.0443 in 1938). In 1939 Pan American Airways used Macao as a secondary airport to Hong Kong, where weather conditions are frequently unfavorable. Portugal governs Macao by virtue of a treaty with China (Dec. 1, 1887). The colony is administered by a governor.

MCGILL UNIVERSITY. A coeducational institution of higher learning in Montreal, Que., Canada, founded in 1821. The enrollment for the 1939-40 session was as follows: Degree students, arts and science, 1113; commerce, 194; engineering, 457; architecture, 22; medicine, 450; dentistry, 59; law, 51; library science, 15; graduate studies, 230; music, 6; diploma students, 75; partial students, 213. At Macdonald College, an affiliated college at Sainte Anne de Bellevue, there were 90 degree students enrolled in the faculty of agriculture; 75 degree students in the school of household science; 44 diploma students in agriculture; 34 in household science; and 188 in the school for teachers. The registration in the French Summer School for 1939 was 102. The number of members on the teaching staff was 554. The endowment amounted to \$20,374,019, while the income for 1938-39 was \$2,013,179. The library contained 394,050 volumes. Principal and Vice-Chancellor, Frank Cyril James who succeeded Lewis W. Douglas on Jan. 1, 1940.

MACHADO Y MORALES, mä-chä'dô ë mö-rä'läs, GERARDO. A Cuban politician, died at Miami Beach, Fla., Mar. 29, 1939. He was born at Camajuani, Santa Clara, Cuba, Sept. 29, 1873. In 1895 he joined the Cuban Army in its final rebellion against Spain and rose to the rank of a brigadier-general. After the War he served in the Rural Guards, and subsequently became president of the Compania Electrica Cubana of Havana, a subsidiary of the Electric Bond and Share Co. Entering politics he was elected mayor of Santa Clara and held that office until the establishment of the Republic. In the elections of 1908 he supported General Gomez and he himself ran for governor of Santa Clara but was defeated. After his election, Gomez appointed him chief of the Cuban Army and later secretary of the interior and inspector general of the Army. In 1910 he resigned and organized the Liberalist-Union Party, ran for governor of Havana, but was defeated. Four years later he reentered the Liberal Party and took part in an unsuccessful revolution after the re-election of President Menocal. He was arrested, imprisoned, and court-martialed, but later released.

In 1920, Machado won control of the Liberal party, and in 1924 he won the nomination for the presidency, being elected Nov. 1, 1924, and inaugurated on May 20, 1925. His campaign program promised an honest, democratic administration and a promise not to stand for reelection, and after taking office he announced the furthering of amicable relations between Cuba and the United States, a vast public works program, and a gradual amortization of the public debt. Until 1928-29, Machado was known as the "best president Cuba ever had," but thereafter he gradually assumed dictatorial powers which led to a reign of terror in that country.

The first dissatisfaction with his rule arose through the amendments to the Constitution ef-

fective in 1928, giving the president a six-year instead of a four-year term and doing away with the right of re-election. On Nov. 2, 1928 he was elected to succeed himself, and thereafter his regime was repeatedly criticized for violations of constitutional rights. His despotism was augmented by the acute economic depression and widespread suffering of the Island in 1930, and only his well-controlled army prevented revolution. From then on his regime was marked by the stifling of all political opposition, strikes, censorship, martial law, murders, etc. The struggle between Machado and his opponents reached its peak in 1933 and the battle raged from January to August. On August 11, the army finally deserted him and on the following day he signed a leave of absence for himself and fled.

After his flight he lived in Montreal, New York, Europe, Dominica, and Bermuda. In 1937 he returned to New York where he was arrested. Extradition proceedings against him were dismissed, however, and he settled in Miami, Fla.

MACHINE DEVELOPMENT. Although the Machine Tool Show planned by the National Machine Tool Builders Association was cancelled at the last moment on account of the war, many new machines had been developed for the exhibition which show many changes from previous models. Not only have capacities and functions been greatly improved but the contours and general appearance have been radically changed in many cases. All the mechanism possible has been enclosed so that many new machines bear little resemblance to their prototypes. There are also many changes in mechanisms and in frame design. And in spite of mechanisms being largely enclosed they are made easily accessible through doors or panels. More machine bases are being made of welded steel plates which in some cases are found to be more satisfactory if combined with parts made of cast iron or steel.

Machine Drives. Motor drives are now incorporated into the machine itself in nearly all cases, the type of motor being selected to suit the requirements of the work. And this in spite of the greater first cost and increased current consumption over group drives for similar machines. The added convenience of the individual motor drive is considered well worth the extra cost involved.

In addition to the main driving motor there are now few machines without smaller, individual motors for performing the various functions such as, feeds, rapid traverse, clamping the cross rail to the housing in planers and boring mills, and pumping oil both for lubrication and for cooling the work and the tools. Multiple spindle drilling machines and others almost invariably now have a separate motor for each spindle.

Speed variation and control are being increased to meet the demand of new cutting tools and different materials. These variations are secured by gear transmission devices, by belts and chains with pulleys in which the diameters of both driver and driven pulleys can be changed, by friction devices, and by hydraulic mechanisms. There is a noticeable increase of the latter in several fields.

Machine spindles are now being driven by hydraulic devices some of which give extremely wide variations of speed. One new hydraulic transmission gives a speed range of from 10 to 3000 r.p.m., which is most unusual. Should this prove as successful as desired it will be very

helpful in the designing of many types of machines.

Machines with a reciprocating movement such as planers, shapers, and slotters are using hydraulic drives very successfully. As a feeding mechanism the hydraulic method has proved most successful in grinding and drilling machines, and is now being applied to lathes and milling machines.

Another adaptation of the hydraulic drive is to be found in the so-called "fluid flywheel" coming into use on a few cars in this country, although not new in England. In fact it has been clamoring for recognition in this country for at least 15 years. It is in reality a hydraulic transmission of the slipping clutch type.

One new application of hydraulics is a control mechanism on the screw feed of milling machines to prevent *backlash* and so make it possible to feed *with* the cutter, or what is known as climb-cutting. This method saves cutters and produces a better finish where it can be used.

Gearing. Gearing continues to receive attention both in design and construction. The demand for gears that will transmit up to 250 h.p. in the transmission of an automobile, and with a minimum of noise, has stimulated designers of both gears and machines for cutting them, as well as the production of steels that have greater strength and wearing qualities than ever known before. Better methods of cutting gear teeth, and of giving them a high degree of finish, have been devised. These finishing methods include shaving and lapping which make the teeth more nearly perfect in shape, in spacing, and in surface finish, all of which reduces noise and adds to the life of gears.

The really new gearing development in tooth design is the Gleason curved tooth bevel gear known as the Zerol tooth. This is a curved tooth with a zero angle to replace straight bevel gear teeth and to give a better and quieter gear which can be substituted for the plain bevel gear without changing the bearing mountings. It is a modification of the spiral bevel gears used in nearly every motor car and truck rear axle drive.

Materials. New steel alloys and alloys of non-ferrous metals give the designer more materials with desirable qualities than ever before. The improvements include greater strength per pound of weight, toughness, hardness, and machineability, which has an important effect on machining costs. In this connection the improvements in both cutting oils and cutting compounds, largely due to the research laboratory work of the oil company chemists, have played an important part. There is also the refined method of cleaning the coolants by centrifugal separators which effects a substantial saving in the grinding wheels used and in the coolant itself. The clean coolant gives a better finish and prevents skin rash on the hands of the workers.

Tools made of new alloys are also reducing production costs. Machining steel has been a stumbling block in the past but some of the newer alloys work here about as well as on cast metals. Standardization of carbide tips for cutting tools has reduced the cost of these tools, which adds to the reduction in production costs. Tools which will cut metals at higher speeds than formerly have led to the re-designing of many machine tools so as to utilize the new cutting alloys.

Stainless steels, formerly machined with considerable difficulty, can now be handled in auto-

matic screw machines and other machining operations, with much the same speeds as other steels. Combining the proper tools with the best coolants for this work gives results that were formerly impossible.

There is also a growing use of such materials as aluminum and magnesium, as well as a wide variety of plastics, all of which present problems in machining. Light weight, which is important in reducing the inertia of rapidly moving parts as well as in airplane construction, make these materials highly desirable in many places. Using the light materials in such reciprocating parts as rams in shapers and slotters, and for lever arms in sewing and similar machines, it has been possible to increase their speed almost beyond belief.

In some work, such as the crank cases of airplane engines, the softness of aluminum sometimes fails to hold studs properly. This is now overcome by a new development known as the Aero thread. Here a helical steel spring is inserted in a specially tapped hole and the inner surfaces of the spring hold the stud. The same plan can be used in connection with plastics although the usual solution for this difficulty is to mold inserts of any desired metal into the plastic form. Plastics are also replacing metals in some fields, a late application being the cover or lid of the trunk in automobile bodies, though not a regular production as yet.

General Changes. Many changes are taking place in various phases of manufacturing. Windowless plants are being tried to secure uniform and better lighting and air conditioning, both adding to production. Men can not only work more easily in an air-conditioned plant but a more uniform product is secured on account of the constant temperature and freedom from dust. Some large plants now bore automobile cylinders in constant temperature rooms.

Lighting is also changing by the introduction of such new methods as fluorescent luminaries, which give a uniformly distributed light and require very little current. Safety work clothes and shoes, as well as goggles, are helping to reduce the number of industrial accidents. Light wave measurement of flat surfaces and of dimensions of parts which must be very accurate, is being used more and more.

Many old operations are receiving great attention. Threads are being ground from the solid stock both for accuracy and on a production basis. Burnishing, tumbling, and plating are now suited to each particular job. Metal parts are being heated by induction coils for hardening in regular production. Wrenches are being made with a torque measuring device to show when bolts are as tight as they should be.

See ELECTRICAL MACHINERY.

F. H. COLVIN.

MACKENZIE, DISTRICT OF. See NORTH-WEST TERRITORIES.

MADAGASCAR. A French island colony in the Indian Ocean Area, 241,094 square miles; population (1936 census) 3,797,936 (including that of the Comoro Islands). Estimated population, 1938, 3,800,000. Chief towns (with 1936 populations in parentheses): Tananarive, the capital (119,823); Majunga (23,684); Tamatave (21,421); Antsirabe (18,215); Tulear (15,180); Diégo Suarez (12,237); Mananjary (11,426); Fianarantsoa (14,740). Education is compulsory

in the primary schools. In 1936 there were 210,973 pupils enrolled in the 1643 schools of all kinds.

Production and Trade. The main agricultural products (with production figures for the 1938-39 season in metric tons) were: Maize (100,000); rice (440,000); coffee (29,500); sugar (12,000); copra (2000); potatoes (36,000 in 1937-38); tobacco (6300 in 1937-38); groundnuts (8200 in 1937-38); cacao (200 in 1937-38). In 1938 there were 6,000,000 cattle, 1,000,000 hogs, and 300,000 sheep in the colony. Forests are rich in cabinet woods, beeswax, raffia, resins, gums, and rubber. Gold exports (1938) totaled 12,699 fine ounces; phosphate production aggregated 6000 metric tons. The colony's imports (1938) were valued at 602,700,000 francs; exports at 819,400,000. (Franc averaged \$0.0288 in 1938.)

Communications. Highway mileage in Madagascar and the island of Réunion was 14,353 in 1938; railways extended 534 miles. There is an automobile service with a network of routes totaling 1375 miles. A regular air service connects Tananarive with Paris. During 1937, 7768 vessels of 4,014,000 tons entered the ports of Madagascar.

Government. The budget for 1938 was estimated to balance at 297,690,000 francs. The government is administered by a governor-general, who is aided by a consultative council. An economic and financial delegation, consisting of 30 French citizens and 24 natives, meets once a year to examine budget proposals and economic questions. In their relations with the government the natives are represented by chiefs. Governor-General, Léon Cayla (appointed Feb 10, 1930).

Comoro Islands. An archipelago, comprising the islands of Mayotte, Anjouan, Grande Comore, and Moheli, forming a region under the general government of Madagascar. The chief imports were cotton fabrics, metals, and rice; the chief exports, sugar, copra, sisal, and vanilla. Area, about 800 square miles; population (1936) 128,608. Capital, Zandzi.

MADEIRA, ma-dé'ra; Port. ma-dá'ra. An administrative district (Funchal) of Portugal consisting of a group of islands (Madeira, Porto Santo, and three uninhabited islands) in the Atlantic, west of Morocco. Area, 314 square miles; population (1930 census), 211,601. Funchal (capital), on the island of Madeira, had 31,352 inhabitants; Ponta do Sol, 6190; Machico, 8619. Wine, cane sugar, and bananas are the main products. The prosperity of the islands depends on the tourist traffic. There are about 160 miles of roads.

MADOERA. See NETHERLANDS INDIES

MAGAZINES. See NEWSPAPERS AND MAGAZINES.

MAGNETISM. See PHYSICS.

MAHÉ See FRENCH INDIES

MAINE. Area and Population. Area, 33,040 square miles; this included, in 1930, water, 3145 square miles. Population by census of Apr. 1, 1930, 797,423; by Federal estimate for July 1, 1937, 856,000; by census of 1920, 768,014. Portland had (1930) 70,810 inhabitants; Augusta, the capital, 17,198.

Agriculture. Maine harvested 1,357,000 acres of principal crops in 1939. Potatoes, from 170,000 acres, totaled 38,250,000 bu. (estimated value, \$26,775,000); 1,005,000 acres gave 918,000 tons of tame hay (\$7,528,000); oats, 121,000 acres, yielded 4,598,000 bu. (\$2,023,000); 900,000 bu. of apples gathered for market had an approximate value of \$765,000.

Manufacturing. In 1937 the manufacturing establishments in Maine numbered 1171 (in 1935, 1189); employed 75,464 wage-earners (in 1935, 68,603); paid them \$72,263,133 (in 1935, \$58,026,987); produced goods, inclusive of goods used by other manufacturers in the State, to the value of \$348,636,096 (in 1935, \$271,730,779); and contributed to this sum, by their processes, \$151,110,521 (in 1935, \$117,215,565). About one in eleven of the population worked for factory wages in 1937. Paper, boots and shoes, woven cottons, and woolen fabrics made up about half of the value of manufactured products; all four were made for markets outside the State, thus bringing money into Maine. Paper-making employed 8023 wage-earners in 1937, paid them \$10,566,722 totaled \$70,084,878 in output, and contributed to that sum, by manufacture, \$27,978,989. The subsidiary industry of pulp-making from wood (chiefly) and fibre, while providing material for the paper-makers, was separately classified in the U.S. Census of manufactures; its output of 1937, \$28,890,516, presumably in great part became material for Maine's paper-making industry and thus reappeared in the value of the paper product. The pulp-making wage-earners, 3356, and their wages for 1937, \$4,458,058, were, however, additional to the corresponding totals in the paper-making group; and paper-making and pulp-making combined paid more wages than any other classification of manufacturers. One other industry surpassed them in number of wage-earners: the manufacturers of boots and shoes employed 13,605; to these was paid \$10,910,203; and the output of boots and shoes for 1937 totaled \$42,568,005. Makers of woven cottons employed 9812 and produced in goods \$28,937,439. Makers of woollens employed 6639 and attained, in output, \$28,409,949.

For 1937, Portland's manufactures totaled \$26,793,410; those of the twin cities of Lewiston and Auburn were: Lewiston, \$25,692,593 (largely textiles) and Auburn, \$14,551,370 (largely shoes). The manufactures of Biddeford totaled \$19,693,019.

Education. For the academic year 1937-38, the last for which complete data on the public schools in Maine had been issued, the State's population of school age (from 5 years to 21) was reported as 260,394. The year's enrollments of pupils in all the public schools totaled 172,286; this comprised 136,681 in the elementary studies and 35,605 in high schools. The annual total of expenditure for public-school education was \$10,523,535. The greater part of this sum went to pay the 4745 teachers in elementary positions their salaries for the year, averaging \$792.97, and to provide 1292 high-school teachers' pay at the average rate of \$1338 18.

Legislation. The regular biennial session of the Legislature, meeting in January and closing late in April, enacted a general appropriation bill carrying a total of \$20,730,000 for the expenditures of the State government during the following two years. It shaped a measure, at the suggestion of Governor Barrows, to require municipalities to contribute to old-age assistance and in return shifting to them a share of the money provided for highway work. The exhibition of moving pictures on Sunday was made lawful in the State, but a proposal to put a special tax on Sunday movies met with defeat. One hour a week of absence from public schools was made allowable for children on condition that their parents sent

them to places of worship or other suitable places to receive moral instruction during the granted time. A bill permitting the re-trial of a case on the defendant's giving the grounds of new evidence was passed, but the Governor vetoed it on advice that the courts could already entertain a writ of error. Measures were enacted to create a State boxing commission for the regulation of commercial pugilistic bouts and a board to set minimum wages for women and children employed in the packing of fish.

A statutory Passamaquoddy District Authority was created and charged with the function of directing the construction of the tidal waterworks and other means of electric generation previously started on Passamaquoddy Bay by the Federal Government and abandoned when Congress ceased appropriating therefor; the move fell in with efforts in Washington to restore the undertaking to the list of public works defrayed by the Government.

Political and Other Events. Lewis D. Barrows began his second term as Governor January 5. He proposed to the Legislature the course, which it later approved, of transferring to the municipalities a part of the charge of the State's share of the payments of old-age assistance, and granting them, in partial return an apportioned yearly \$800,000 of money for highways; he represented this plan as permitting a rise in the number of recipients to 14,000, from 11,500, and the proposal did not call for any immediate taxation by the State government to compensate the added cost. The related question of further rise in the State's bonded debt was sent to the voters in the form of a referendum, whether to amend the State constitution so as to increase the permitted total of the State's bond issues to \$45,000,000. A vote cast at a special popular election, September 11, dealt with this proposal.

The nine organizers of the C.I.O. convicted, in a State court, of injuring property in the course of the shoe-factory strike at Auburn and Lewiston in 1937 lost their appeals from the verdict after carrying the case as far as the U.S. Supreme Court; they entered the Androscoggin County Jail (January 5), to serve sentences of five months. Dr. George H. Coombs, the State's Director of Health, declared to a committee of Legislators in February that malnutrition, contributing to scurvy, was prevalent among school-pupils in the northern part of Aroostook County; Governor Barrows rejoined that reports of scurvy were "incorrect, high-pressure advertising"; Coombs stood by his statement and immediately resigned. Later the Governor, answering inquiry on this subject from the Legislature, stated that the last five cases of reported scurvy had occurred in the previous autumn and had all ended in recovery; he gave the apparent source of the rumors about scurvy in Maine as a communication from the Federal Bureau of Home Economics, addressed to, and given to the press by, Representative Brewster, former Democratic Governor.

Officers. Maine's chief officers, serving in 1939, were: Governor, Lewis O. Barrows (Rep.); Secretary of State, Frederick Robie; Treasurer, Belmont A. Smith; Auditor, Elbert D. Hayford; Attorney-General, Franz U. Burkett; Commissioner of Education, Bertram E. Packard.

MAINE, UNIVERSITY OF. A coeducational State institution of higher learning at Orono, founded in 1865. The enrollment for the fall of 1939 was 2061, of whom 1545 were men and 516 were women. The

teaching members of the faculty number 167. A new dormitory to accommodate 160 women was under construction. The productive funds amounted to \$995,883 and the income for the year was \$1,766,949. The library has 136,000 volumes. The enrollment at the 1939 summer session, including the University's Biological station on Frenchman's Bay at Lamoine, was 604. President, Arthur A. Hauck, Ph.D.

MALACCA. See STRAITS SETTLEMENTS.

MALAY STATES. See BRITISH MALAYA; FEDERATED MALAY STATES; UNFEDERATED MALAY STATES; STRAITS SETTLEMENTS; BRITISH NORTH BORNEO; BRUNEI; SARAWAK.

MALDIVÉ ARCHIPELAGO. See CEYLON.

MALTA. An island in the Mediterranean, 58 miles south of Sicily, and under British rule since 1800. Its area is 95 square miles and is governed jointly with the islands of Gozo (26 sq. mi.), and Comino (1 sq. mi.). Total area, 122 square miles; civil population (Jan. 1, 1938), 264,663, compared with 241,621 (1931 census). During 1937 there were 8879 births, 5304 deaths, 1806 marriages. There were 34,054 pupils in the 167 schools of all kinds and 156 students in the university at the beginning of the school year 1937-38. Valletta, the capital, had 22,779 inhabitants in 1931. Malta is the headquarters of the British Mediterranean Fleet, and is an important link in British Imperial communications.

Production and Trade. Crop production (1938-39) in metric tons was: Barley, 4600; wheat, 8000; potatoes, 28,500; maize, 100. Oranges, figs, and honey are plentiful. Lace, cotton, filigree, beer, cigarettes, wine, and canned tomatoes are produced. Livestock (1937) included: 9247 horses, mules, and asses; 3823 cattle, 15,030 sheep, 33,707 goats. The fish catch (1937-38) amounted to 1200 tons valued at £73,000. In 1938 imports were valued at £3,866,138; exports, £687,387. Vessels entering Valletta during 1938 aggregated 4,488,153 tons.

Government. The budget for the year ending Mar. 31, 1940, estimated revenue at £1,499,811; expenditure at £1,420,699. In 1938-39, revenue was £1,343,014; expenditure, £1,353,762. A new constitution was promulgated (Feb. 26, 1939) in accordance with Letters Patent received in Valletta on February 14. It provides for a Council consisting of 8 official, 2 nominated and 10 elected members to advise the governor of the island, who may nevertheless rule by decree. English is made the language of government; Maltese the language of the courts; the language to be taught in the schools is left to the discretion of the governor. Religious freedom is guaranteed, but clergymen are barred from elective office. The constitution of 1921, under which Malta had a responsible ministry, was suspended in 1933 following widespread pro-Italian agitation. As a result of the 1939 elections, the new Malta Council will be composed of 6 Constitutionalists (pro-British); 3 Opposition Nationalists (pro-Italian) and 1 Labor party member. Governor and Commander-in-Chief, General Sir Charles Bonham-Carter (appointed Feb. 17, 1936).

History. Economies of £35,000 annually in the public services and new revenue to the extent of £91,150 in 1939 and rising to £107,500 in 1944-45 were recommended to the government in March, 1939, by a special committee appointed by the governor to examine the colony's financial structure. Such savings and taxes, it was reported, would

enable the government to enlarge the drainage system of Valletta; construct a new power station; and install at a cost of £80,000 several pasteurization plants for goats' milk. (Pasteurization of goats' milk was ordered by the government to check the spread of undulant fever, the virus of which is carried in the milk of the goat).

During 1939 the government spent £200,000 in modernizing accommodations for British troops, whose numbers were greatly augmented both before and after the outbreak of the European war on September 3.

MAMMALS. See ZOOLOGY.

MANADO. See NETHERLANDS INDIES.

MANCHOUKUO, mǎn'jō'kwō'. An empire in northeastern Asia established under Japanese protection Mar. 1, 1932; comprising the former Chinese provinces of Fengtien, Kirin, and Heilungkiang in Manchuria, and Jehol in Inner Mongolia. Capital, Hsinking (formerly Chang-chun). Ruler in 1939, Emperor Kangtē, who was enthroned Mar. 1, 1934.

Area and Population. Including the South Manchuria Railway Zone under direct Japanese jurisdiction but excluding Kwantung (q.v.), the area of Manchoukuo is estimated by Japanese sources at 503,013 square miles. The population on Dec. 31, 1937, totaled 36,933,206 (35,337,980 on Dec. 31, 1936). There were 35,518,849 Manchurians (predominantly Chinese, with Manchu and Mongol minorities), 931,459 Koreans, 417,759 Japanese, and 65,139 others, mainly Russians. Populations of chief cities (December, 1937): Mukden, 711,674; Dairen (in Kwantung), 503,778; Harbin, 457,980; Hsinking, 334,692; Antung, 204,382; Yingkow, 161,908; Kirin, 122,586. In 1938 573,786 Chinese coolies entered Manchoukuo and 291,097 departed. Korean peasants settling in Manchoukuo in 1938 numbered 15,850. The Japanese population of Manchoukuo rose by 379,114 between 1933 and 1937, but of these only 5245 represented Japanese farm colonists.

Defense. Conscription for all men between 19 and 40 was introduced in 1938, the term of service being three years. The regular Manchoukuoan army, officered by Japanese, numbered about 80,000 and there is a navy of 22 new gunboats, patrol vessels, and other small ships. In addition about 475,000 picked Japanese troops were reported to have been concentrated in Manchoukuo as of June, 1939. See *History*.

Education and Religion. In 1938 there were 12,063 elementary schools, with 1,372,454 pupils; 136 high schools, with 39,491 pupils; 15 normal schools, with 3901 students; 79 vocational schools, with 8149 students. Enrollment in institutions of higher learning was 1264, including the National University founded at Hsinking in 1938. Buddhism, Taoism, Mohammedanism and Lamaism are the chief religions. Christians number about 100,000.

Production. About 85 per cent of the inhabitants are engaged in agriculture, but manufacturing is rapidly expanding. Estimated yields of the chief crops in 1938 were (in metric tons): Soybeans, 4,634,240; other beans, 344,051; kaoliang, 4,626,293; millet, 3,181,211; corn, 2,298,506; wheat, 933,522; rice, 770,467. Livestock (1936): Cattle, 1,421,263; sheep, 1,680,545; goats, 751,587; swine, 6,911,167; camels, 11,024; horses, 1,998,000 (1935). Coal and lignite output in 1937 was about 14,100,000 metric tons; iron ore, pig iron, steel, magnesite, gold are the other chief metals (see 1938 YEAR BOOK for 1936 figures).

HISTORY

There were in Manchoukuo on Dec. 31, 1938, 3900 business companies with a paid-up capital of 2,469,162,000 yuan. They included 712 manufacturing industries (textiles and dyeing, 52; chemicals, 119; metals, machinery, and tools, 115; lumbering and wood products, 91; foodstuffs, 216; miscellaneous, 119); ceramics and mining industries, 186; electric and gas industries, 28; banking and commercial enterprises, 2062.

Foreign Trade. Imports in 1938 totaled 1,271,191,000 yuan (887,412,000 in 1937); exports, 714,374,000 (645,298,000). Japan supplied imports to the value of 979,184,000 yuan in 1938 (666,270,000 in 1937) and took exports valued at 411,442,000 yuan (321,512,000). Leading exports were soybeans, 230,846,000 yuan; castor seeds, 70,067,000; coal and briquettes, 27,859,000. The chief imports were cotton textiles, 104,645,000 yuan; iron and steel, 76,430,000; machinery and parts, 53,859,000; vehicles and parts, 44,562,000. Soybeans and their products normally account for about half of Manchoukuo's total exports.

Finance. The general accounts budget for 1939 balanced at 403,377,000 yuan (304,555,000 in 1938) while the special accounts budget called for revenues of 1,353,957,000 yuan and expenditures of 1,288,261,670 yuan (1,128,936,828 and 1,088,572,518, respectively, in 1938). The Manchoukuo yuan was pegged to the Japanese yen (one yuan equals one yen) on Oct. 28, 1935. The yen exchanged at an average of \$0.2845 in 1938 and \$0.2596 in 1939.

The public debt on Dec. 31, 1937, totaled 462,030,250 yuan of which 207,000,000 yuan represented borrowings in Japan.

Communications. The railway mileage of Manchoukuo increased from 3799 miles on Mar. 1, 1933, to 6216 miles on Nov. 1, 1938, all of which are owned or operated by the South Manchuria Railway Co., controlled by the Japanese Government. The company also operates the North Chosen Railways (214 miles) in Korea. The business revenues from all these lines in 1938 were 192,745,937 yuan and expenditures 95,628,871 yuan. On all of its numerous business enterprises, the S.M.R. in 1938 reported revenues of 387,411,623 yuan and expenditures of 314,536,436 yuan. State highways totaled about 4000 miles in 1938. Commercial air services link the leading cities and towns. On Mar. 1, 1938, a non-stop air service between Hsinking and Tokyo was inaugurated. Extensive improvements to the new port of Hulutao to increase its capacity to 4,000,000 metric tons annually were under way in 1939.

Government. Under the Constitution of Mar. 1, 1934, as amended July 1, 1937, Manchoukuo is a monarchy in which the Emperor exercises both executive and legislative powers, the latter being subject to the approval of the Legislative Council, an advisory body appointed by the Emperor. There is also a Privy Council of five members; a State Council, or cabinet, of six departments; and a General Affairs Board, attached to the State Council, which supervises budgets and national policies. A Planning Council is under the direct control of the Prime Minister.

Actual power rested in the hands of the Japanese Ambassador to Manchoukuo, who was also commander-in-chief of the Japanese and Manchoukuoan troops in Manchoukuo and Governor of Kwantung (q.v.). Lieut. Gen. Yoshikiri Umezu replaced Gen. Kenkichi Uyeda as Japanese Ambassador and commander-in-chief at Hsinking in September, 1939. Prime Minister, Marshal Chang Chinghui, whose cabinet was reorganized May 7, 1937.

Border Warfare. The sporadic clashes along Manchoukuo's borders that had marked Japanese-Soviet relations since the Japanese conquest of Manchuria in 1931 assumed far greater proportions in 1939. In May fighting broke out along the Manchoukuo-Outer Mongolian frontier between Japanese and Manchoukuoan troops on one side and Soviet and Outer Mongolian forces on the other. The conflict gradually increased in intensity during the summer months, with both sides bringing up reinforcements. During July Soviet planes repeatedly bombed Halunarsan, terminus of the nearest Manchoukuoan railway supply point, and other railway centers. Late in August a large-scale battle for the possession of disputed territory along the Khalka River raged for 10 days, with both sides using planes, artillery, tanks and mechanized forces. With the outbreak of the European war on September 1, the fighting was ended and on September 16 a truce was arranged between Soviet and Japanese commanders.

On October 3 a War Office spokesman in Tokyo admitted that the Japanese forces had suffered a check from Soviet-Manchoukuoan forces that were superior both numerically and mechanically. He placed the Japanese-Manchoukuoan losses in killed, wounded, and sick at 18,000 and estimated enemy losses at about the same.

In connection with the war threat, the Manchoukuoan Government on July 26 invoked certain provisions of the Defense of the Realm Act, including general police and air-defense measures, restrictions on freedom of speech, publication, travel, and communication, and prohibition of the possession of guns or explosives. Meanwhile the Japanese authorities were strengthening their general military and economic position in Manchoukuo. Late in May a scheme for the development of the northern frontier regions at a cost of 1,000,000,000 yuan, to be completed in the main before 1942, was announced at Hsinking. It called for the construction of additional strategic railways, colonization of frontier areas with Japanese farmers, and the construction of supply bases.

The Five-Year Plan. The frontier development project was one of the additions incorporated in the five-year plan for the economic development of Manchoukuo, inaugurated in 1937 and revised and enlarged in 1938 and 1939. With the 1939 innovations, the plan called for a total expenditure of about six billion yuan, to be raised mainly in Japan. According to official Japanese statistics, Japanese investments in Manchuria during 1936-38 totaled 1,035,248,000 yen.

This programme speeded the transformation of Manchoukuo into a Japanese military and economic appendage. State control of foreign trade was extended on May 25, with the result that additional foreign exchange was diverted to the financing of imports of war materials and heavy industrial equipment. At the same time imports of all other kinds of goods from countries other than Japan were more severely restricted. These developments were accompanied late in 1939 by an industrial boom, an increasing shortage of commodities, rising prices, and other symptoms of monetary inflation that caused anxiety and hardship, particularly among the farming population. Government price-control measures failed to check the inflationary tendency.

On December 11 a 400,000,000-yen bond issued was announced, bringing the government loans

floated during 1939 to 5,030,000,000 yen. Registration of technicians and other experts for war service was decided upon October 1. A government monopoly of imports and exports was established together with an agency controlling the distribution and prices of indispensable commodities.

Other Events. On January 9 Hungary joined the list of states recognizing the independence of Manchoukuo; the others were Japan, Italy, Germany, Poland, and El Salvador. On February 24, Manchoukuo became a signatory of the anti-Comintern pact concluded by Germany and Japan Nov. 25, 1936. The barter agreement concluded with Germany in 1938 was extended for one year on May 31. In January it was announced that the Mongol princes in Manchoukuo had transferred their lands to the government and renounced their feudal privileges, accepting in return the interest on a public loan of 6,000,000 yuan.

See CHINA, JAPAN, MONGOLIA, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*.

MANDATED TERRITORIES. Following is a list (as of Dec. 31, 1939) of territories conquered from the German and Ottoman empires during the World War and mandated by the League of Nations to various of the Allied Powers under the terms of the Treaty of Versailles.

Mandated Territory*	Mandatory Power	Former Owner
Cameroon, French	France	Germany
Cameroons, British	Great Britain	Germany
Japanese Pacific Islands	Japan	Germany
Nauru	British Empire	Germany
New Guinea, Territory of	Australia	Germany
Palestine	Great Britain	Ottoman Empire
Ruanda-Urundi	Belgium	Germany
Samoa, Western	New Zealand	Germany
South-West Africa	Union of South Africa	Germany
Syria and Lebanon	France	Ottoman Empire
Tanganyika Territory	Great Britain	Germany
Togo, French	France	Germany
Togoland	Great Britain	Germany

* Iraq, a territory mandated to Great Britain, became an independent State by treaty with the mandatory power on June 30, 1930.

See the separate article on each mandated territory; also GERMANY under *History*; LEAGUE OF NATIONS

MANEUVERS, FIRST ARMY, U.S. See MILITARY PROGRESS.

MANGANESE. In view of the relatively small production of high-grade manganese ores in the United States and the high rate of consumption in the steel and other industries, the bulk of domestic supply is imported from Russia, Cuba, African Gold Coast, Brazil, and British India. Manganese is regarded as a "strategic" material by the U.S. Army and Navy, and is bought by those departments of the Government for stockpile reserves. In 1938 the Navy bought 11,500 tons of standard grade ferro-manganese. In 1939 the Procurement Division of the Treasury Department invited bids under the Strategic Minerals Act but no awards were announced.

The industrial importance of this mineral led the Bureau of Mines to make monthly surveys of production and stocks of manganese ore in the United States. The report for October, 1939, shows production of 3400 tons of ore containing 35 per cent or more of manganese, compared with 3000 tons in September; imports of 111,900 long tons in October, and 87,581 tons in September. For the first ten months of 1939 The Gold Coast

supplied 41 per cent of United States imports. Stocks of manganese ore in bonded warehouses Oct. 31, 1939, were 886,020 long tons, containing 437,425 tons of manganese metal, compared with 842,048 and 418,721 tons, respectively, at the beginning of 1939.

Major uses for manganese are found in the production of steel, the manufacture of dry batteries, and in the chemical, ceramic, and glass industries. Two principal grades of ore are recognized in the trade: metallurgical, 48-50 per cent metallic manganese content, for use in the iron and steel industries; and chemical 70 to 85 per cent manganese dioxide, valued for its high oxygen content.

H. C. PARMELEE.

MANHATTAN COLLEGE. A Roman Catholic institution for higher education, under the Brothers of the Christian Schools, founded in 1863. The enrollment for 1939-40 was 1189, including 635 in the School of Arts and Sciences, 257 in the School of Engineering, and 297 in the School of Business. The registration for the summer session—1939—was 170. There were 108 members of the faculty. The income for the year was \$574,500. There were 58,721 volumes in the library. President, Brother A. Victor, I. S. C., Ph. D.

MANITOBA, mǎn'ī-tō'ba. A prairie province in west-central Canada. Area, 246,512 square miles; population (June 1, 1939, estimate), 727,000, compared with 711,216 (1936 census). During 1938 there were 13,478 births (18.7 per 1000); 5893 deaths (8.2 per 1000); and 6262 marriages (8.7 per 1000). Chief towns (1936 population figures in parentheses): Winnipeg, the capital (215,814); Brandon (16,461); St. Boniface (16,275); Portage la Prairie (6538); and Transcona (5578). In 1937 there were 164,810 pupils enrolled in schools of all kinds, including 5354 in the universities and colleges.

Production. The gross value of agricultural production for 1938 was estimated at \$87,491,000 (\$121,253,000 in 1937), of which field crops represented \$54,649,000 (\$90,930,000 in 1937). Other important items were: Dairy products, \$15,363,000; farm animals, \$10,146,000; poultry and eggs, \$4,190,000. Crop production in 1939 in bushels was: Wheat, 59,000,000; oats, 32,000,000; barley, 27,000,000; rye, 2,404,000; flaxseed, 620,000; and hay and clover, 624,000 tons. Livestock (1939): Horses, 315,000; cattle (including milch cows) 787,000; sheep, 230,000; swine, 311,000. Fur production (1937) totaled 480,479 pelts valued at \$663,579. The output of forests in 1938 equaled 73,897 M cu. ft. valued at \$2,812,234. In 1938 the fish catch was valued at \$1,811,100.

Mineral production for 1938 was valued at \$15,233,728 of which gold (185,706 fine oz.) accounted for \$6,532,209; copper (65,582,772 lb.), \$6,539,914; zinc (46,864,575 lb.), \$1,440,148; silver (1,198,315 fine oz.), \$520,991; cadmium (115,166 lb.), \$92,543. In 1937, from the 1043 establishments, with a total of 23,706 workers, the gross value of manufactures was \$140,805,000. Chief industries were meat (slaughtering and packing); railway rolling stock; flour; butter and cheese; printing and publishing; malt and malt products.

Government. For the year ended Apr. 30, 1939, revenue totaled \$16,960,854; expenditure, \$15,578,487; public debt, \$129,007,425. The government is administered by a lieutenant-governor (appointed by the governor-general in council)

and he is advised by a ministry of 8 members who are members of the legislative assembly of 55 members elected for a term of 5 years by popular vote of the people. Manitoba is represented in the Dominion parliament at Ottawa by 6 Senators (appointed for life) and 17 members of the House of Commons. Lieutenant-Governor, William J. Tupper (appointed Nov. 17, 1934); Premier, John Bracken. See CANADA under *History*.

MANTON, MARTIN T. See COURTS, FEDERAL.

MANUFACTURED GAS. See GAS.

MANUFACTURERS, NATIONAL ASSOCIATION OF. A voluntary organization of corporations and individuals engaged in production of manufactured goods. Founded in Cincinnati in 1895, the membership numbers approximately 6000 manufacturers from all industrial centers of the United States. These members, who are conservatively estimated to employ more than 50 per cent of the manufacturing employees of the country, contribute to the support of the Association. Offices are maintained in New York, Washington, D. C., and San Francisco, and the policies are controlled by a Board of Directors, consisting of representatives of large and small firms in various industries from all parts of the country. The general aims and purposes of the Association as set forth in its Constitution are:

The promotion of the industrial interests of the United States, the fostering of the domestic and foreign commerce of the United States, the betterment of the relations between employer and employee, the protection of the individual liberty and rights of employer and employee, the education of the public in the principles of individual liberty and ownership of property, the support of legislation in furtherance of those principles and opposition to legislation in derogation thereof

Activities are grouped under four general headings: Public Relations, Economic Research, Employment Relations, and Legislative. To serve its members the Association issues a weekly *News Letter*, a bi-monthly *Social Security Bulletin*, a monthly *Labor Relations Bulletin*, a monthly *Law Digest*, and occasional bulletins on agriculture, tariffs, and other subjects related to industrial management. Also, it maintains a research staff and an industrial library to furnish information to its members. Principal among the institutions which the Association has fought for during the past 42 years are the Panama Canal, the U.S. Department of Commerce, the original "pure-foods" laws, an enlarged foreign trade, the Parcel Post, the Federal Reserve System, the non-partisan, semi-judicial tariff commission, a strong merchant marine, Workmen's Compensation, and Safety Work. The Association also was instrumental in forming the National Industrial Council Board, the National Safety Council, and the Chamber of Commerce of the United States.

At the annual meeting of the Association, held in New York, Dec. 6-8, 1939, at which Wendell Willkie was a principal speaker, a "Declaration of Principles Relating to the Conduct of American Industry" was adopted, which will have long range significance as an official guide-book to management policy. In previous years, the "platform" adopted by the annual meeting generally consisted of industrial attitude toward public issues then current. Such issues in 1939 were treated by separate resolutions, and the basic document concerned itself principally with industrial attitude toward its own management responsibilities.

The officers of the Association for 1939 were:

Chairman of the Executive Committee, William B. Warner, President, McCall Corporation; Chairman of the Board, Charles R. Hook, President, The American Rolling Mill Co.; President, Howard Conoley, Chairman of the Board, Walworth Co.; Vice-Presidents, A. W. Hawkes, President, Congoleum-Nairn, Inc.; H. W. Prentiss, Jr., President, Armstrong Cork Co.; S. Clay Williams, Chairman of the Board, R. J. Reynolds Tobacco Co. Walter B. Weisenburgen is Executive Vice-President of the Association and the active full-time head. Headquarters were at 14 West 49th St., New York, N. Y.

MANUFACTURING. See BUSINESS REVIEW.

MARIANA ISLANDS. See JAPANESE PACIFIC ISLANDS.

MARIETTA COLLEGE. A nonsectarian, coeducational institution at Marietta, O., founded in 1797, chartered in 1835. The total registration for the autumn term of 1939 was 423 of whom 250 were men and 173 women. The 1939 summer school enrollment was 17. The faculty numbered 38. The endowment amounted to \$1,291,883 and the income for the year was \$157,560. The library contained 115,093 volumes. During 1939 the college raised \$96,253 of a \$1,500,000 endowment. President, Harry Kelso Eversull, D.D.

MARIHUANA. See NARCOTICS CONTROL.
MARIISK AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

MARINE INSURANCE. See INSURANCE.

MARITIME COMMISSION. See SHIPPING.

MARITIME LABOR BOARD. See SHIPPING.

MARITIME PROVINCES. The Canadian provinces of New Brunswick, Nova Scotia, and Prince Edward Island (q.v.).

MARKETING. A number of significant changes occurred in the field of marketing during the year. All major divisions of distribution enjoyed an increased volume of turnover, due to the expansion of industrial activity and the consequent increase in consumer purchasing power. Progress in applying the Robinson-Patman Act by the Federal Trade Commission, in view of the refusal of the Supreme Court to review the Commission's orders halting allowances and discounts in lieu of brokerage fees to large buyers of merchandise, brought additional significant changes in wholesaling practices. In the retail field, interest centered upon legislation barring price cutting on branded goods and sales below cost. Additional states enacted such laws, and various retail groups co-operated with manufacturers in seeking to strengthen their enforcement. Super-markets made marked progress as a relatively new type of retail agency in the grocery field, while liberalization of terms was characteristic of the installment finance sector of retailing.

Another development in the retail field was the application of the new Federal Food Drug and Cosmetic Act, which went into effect January 1. Efforts were made to enact corresponding state laws in a number of states, and eight such measures were put into effect. The phase of the new legislation of greatest immediate interest to distributors was the descriptive labeling requirements as administered by the Department of Agriculture.

Raw Materials Marketing. The marketing of farm products was once again influenced in large measure, during 1939, by the agricultural control

program. Loans were made available by the Government to growers of cotton, wheat, and corn complying with the program which practically established minimum prices for these commodities. Thus, farmers who were not satisfied with the prices available in the market, or who expected higher prices later on, could pledge their crops with the Commodity Credit Corporation for these Government loans. The Government also largely influenced the marketing of various other farm products through purchases of surplus production for relief distribution. In the case of flue-cured tobacco, the outbreak of the European war caused the withdrawal of British tobacco companies as buyers. Since they normally purchased some 30 per cent of the crop, it was necessary to suspend the auction sales, but the Commodity Credit Corporation stepped in and took over large quantities of the tobacco, giving options to British manufacturers for its purchase later on. In this way, the demoralization of the market for flue-cured tobacco was checked, although prices declined sharply and plans were launched to cut the 1940 crop substantially.

The marketing of imported raw materials and foodstuffs in this country was affected materially by the war. Export quotas set by the international cartels were modified or lifted in the case of rubber and tin, while the sugar-quota system was suspended in this country by Presidential proclamation on September 11, and was not re-imposed until near the end of the year for the following year, to check a rise in the sugar price that was brought about by heavy advance purchases by consumers. The suspension of the quotas caused the domestic sugar price to lose all the advance that occurred at the start of the war.

Trading on the commodity futures exchanges was again in moderate volume, largely as a result of Government restrictions on production of the major crops. The turnover on all the futures exchanges aggregated 2,423,000 contracts, which compared with 2,446,000 in 1938, and 76 per cent of the total trading occurred on the regulated cotton, grain, and butter and egg futures exchanges, as compared to 80 per cent on these regulated exchanges in 1938. The Commodity Exchange Administration, in its annual report for the year ended June 30, 1939, urged the extension of Federal regulation to futures trading in 15 other commodities, including imported products such as sugar, coffee, and cocoa. Only rubber, raw silk, and non-ferrous metals would be exempt from Federal regulation of futures trading, if this program were adopted. Many members of commodity exchanges opposed this proposal, contending that the Commodity Exchange Administration had had insufficient experience to justify any such sweeping extension of its powers. Various unregulated commodity futures exchanges effected further improvements in their operations, such as the regular publication of open interest statistics and the elimination of speculative trading in commodity futures contracts on credit.

Wholesale Trade. The increase in the volume of wholesale trade made 1939 a more satisfactory year for jobbers generally than was 1938. The firmer trend in commodity prices during the latter part of the year also proved a favorable development. Wholesalers who sell brands of their own were aided to some extent by the wider adoption of unfair sales laws, which barred the use of competitive nationally advertised brands as loss leaders by retailers, and by the increased employment

of price maintenance contracts under state fair trade laws. For the year as a whole, 2276 wholesalers reported an increase of 6.7 per cent in sales over 1938.

A great deal of activity in connection with the enforcement of the Robinson-Patman Act took place during the year, but most pending investigations and proceedings before the Federal Trade Commission did not reach the stage where actual orders were issued. When the United States Supreme Court refused to review the Commission's order that the Great Atlantic & Pacific Tea Company cease to accept brokerage allowances, or the equivalent, lingering hopes that this section of the law would be held invalid or interpreted in a narrow sense largely disappeared. As a result, there was a tendency in several industries to review and modify prevailing policies with regard to price differentials of all kinds, to adjust them to the act. In the floor-covering field, for example, the practice of allowing quantity discounts to distributors on a cumulative basis was abandoned by leading manufacturers at the turn of the year.

The volume of wholesale trade, month by month, during 1938 and 1939, as reported by the Bureau of the Census on the basis of reports from a varying number of wholesalers, was as follows:

WHOLESALE TRADE

(Sales of Wholesalers Reporting to The Bureau of The Census and The National Association of Credit Men. Figures not comparable as number of reporting concerns varies)

Month	1938	1939
January	\$125,890,000	\$168,856,000
February	123,089,000	183,999,000
March	156,706,000	210,188,000
April	161,011,000	185,109,000
May	154,602,000	213,143,000
June	179,282,000	203,752,000
July	165,615,000	196,974,000
August	197,445,000	216,765,000
September	217,489,000	253,688,000
October	211,804,000	233,818,000
November	204,222,000	217,124,000
December	185,565,000	177,194,000

Retail Trade. Department store sales increased by 5 per cent during 1939, as compared with the year before, according to the Federal Reserve Board. Changes in sales volume of stores in various Federal Reserve Districts for the year were as follows:

DEPARTMENT STORE SALES

(Change in Volume, 1939 as compared with 1938)

Federal Reserve District	Percentage Change (+ Increase)	Federal Reserve District	Percentage Change (+ Increase)
Boston	+3	Chicago	+6
New York	+2	St. Louis	+6
Philadelphia	+7	Minneapolis	+5
Cleveland	+9	Kansas City	+1
Richmond	+5	Dallas	+1
Atlanta	+9	San Francisco	+3

Sales of other types of stores over the three years 1937-39 varied as follows:

RETAIL SALES

(1929-31 = 100)

	1937	1938	1939
Variety Chain Stores	102.0	98.0	101.9
Grocery Chain Stores	95.7	94.1	101.6
Rural Merchandise Stores	121.7	114.1	119.0

* Preliminary.

This increase in retail sales through various types of distribution agencies reflected not only a

sharp increase in payrolls, particularly during the latter months of the year, incident to the upturn in industrial activity, but also larger dividend disbursements and entrepreneurial withdrawals, because of the increase in business profits, and a moderate upturn in farm income for the year. Department store sales were aided to some extent by the wider adoption of installment selling methods, including the introduction by a number of metropolitan department stores of the system of installment payments on larger purchases above a specified minimum. Also, longer terms were made available to buyers of a number of durable consumers' goods on credit. Liberalization of installment sales terms was brought about further through active competition by the banks in installment financing.

In the grocery field, the super-market type of store, in which the buyer obtains minimum service and the appeal is primarily one of low price, enjoyed its best year. More than 1300 new independent super-markets were opened during the year, making the total number of such stores in operation at the end of 1939 almost 5000. In addition, a number of super-markets were opened by chain-store enterprises, both because they were profitable in themselves and because these stores furnished a means of escaping punitive chain-store taxes. Consumer opposition, as well as the ability of chains to reduce their tax burdens through opening super-markets and giving up a large number of smaller stores, explained the declining popularity of punitive chain-store taxes. At the end of the year, only 19 states had such taxes, as compared with the 25 states that originally imposed them. The extremely burdensome Patman bill for Federal chain-store taxation failed to emerge from committee in Congress.

By the end of the year, 44 states had fair-trade laws in effect, Alabama having been added to the list of states authorizing price maintenance on branded goods by sellers. These laws are now being used most widely in the sale of durable consumers' goods and liquor. During 1939 a number of manufacturers of electrical appliances made use of the law for the first time. By the end of 1939, furthermore, 21 states had in effect unfair sales laws barring retail sales below cost. Five states, Connecticut, Maryland, Michigan, New Jersey, and Pennsylvania, reported that their unfair sales laws had been declared unconstitutional by the states' Supreme Courts, and litigation involving such legislation in several other states was under way. In New York, the legislature passed a law to bar loss-leader selling, but the Governor vetoed it as unenforceable. In Ohio, a concerted effort to bar loss-leader selling of food products was made under the auspices of the National Food and Grocery Conference Committee, which represents wholesalers and manufacturers as well as retailers. The so-called Model Unfair Sales Law in that state bars sales at wholesale with a mark-up of less than 2 per cent, and retail sales where the mark-up is less than 6 per cent. Independent retailers claimed that the experiment has been successful.

The Federal Surplus Commodities Corporation expanded the application of its plan for the distribution of surplus foods to persons on relief through the issuance of stamps. The plan was tried in a number of cities, with reasonable success, and steps were under way at the end of the year to apply the same system to the relief distribution of cotton textiles. Under this plan, relief

recipients who buy a stated quantity of the surplus commodities through the use of stamps distributed to them receive an additional allotment, to be bought with stamps of a different color they receive at the same time. Since the stamps are exchangeable for merchandise through established retailers, the sales volume of the latter is increased by this scheme, and retailers generally favor the plan as against the alternative, still widely used, of distributing commodities to persons on relief from government stations.

For legislation, as Chain Store, see TAXATION.
JULES I. BOGEN.

MARKETING QUOTAS. See AGRICULTURAL ADJUSTMENT ADMINISTRATION.

MARQUESAS ISLANDS. See OCEANIA, FRENCH ESTABLISHMENTS IN.

MARQUETTE UNIVERSITY. An institution of higher education for men and women, under Roman Catholic direction, in Milwaukee, Wis., organized as a college in 1881 and chartered as a university in 1907. The total enrollment for the autumn of 1939 was 4161. The registration for the 1939 summer session was 878. The faculty numbered 404. Endowment funds amounted to \$2,258,960. The income for the year was \$1,277,316, which included the value of the services rendered gratis by the Jesuits in 1938-39. The library contained 118,882 volumes. In the summer of 1939 a campaign was launched to raise funds for a new Engineering building and endowment for the College of Engineering. President, The Rev. Raphael C. McCarthy, S.J., Ph.D.

MARSHALL ISLANDS. See JAPANESE PACIFIC ISLANDS.

MARTINIQUE, mar'ti-nēk'. A French West Indian colony. Area, 385 square miles, population (1936 census), 246,712. Fort-de-France, the capital, had 43,338 inhabitants in 1931. Output of chief products, in metric tons, was: Sugar, 55,000 (1938-39); cacao, 200 (1937-38); bananas, 39,360 (exports, 1937); preserved pineapple, 877 (exports, 1937). Rum exports totaled 1,704,340 gal. in 1937. General merchandise imports (1938) in old U.S. gold dollars were valued at \$4,400,000; exports at \$4,800,000. In 1937, 600 vessels entered Martinique ports. There were, in 1937, 479 miles of roads. For 1937 the budget was balanced at 101,100,000 francs (franc averaged \$0.0405 in 1937; \$0.0288 in 1938; \$0.0251 in 1939). The government was under a governor who was assisted by an executive council, an elected general council, and elected municipal councils. Martinique was represented by one senator and two deputies in the French parliament.

MARYLAND. Area and Population. Area, 12,327 square miles; included (1930) water, 2386 square miles. Population: Apr. 1, 1930 (census), 1,631,526; July 1, 1937 (Federal estimate), 1,679,000; 1920 (census), 1,449,661. Baltimore had (1930) 804,874 inhabitants; Annapolis, the capital, 12,531.

Agriculture. Maryland harvested, in 1939, 1,652,200 acres of principal crops. Nearly four-fifths of this total was in corn, wheat, and tame hay. Corn, on 506,000 acres, made 18,216,000 bu. (estimated value on the farm, \$11,294,000); wheat, on 377,000 acres, 7,352,000 bu. (\$5,735,000); tame hay, on 413,000 acres, 518,000 tons (\$5,491,000). Tobacco, on 38,200 acres, yielded 29,796,000 pounds (\$5,661,000); potatoes, 25,000 acres, 2,375,000 bu. (\$2,161,000). Barley, on 72,000 acres, a rising total, gave 2,160,000

bu. (\$1,015,000). Apples gathered for market amounted to 1,700,000 bu. (\$1,105,000).

Manufacturing. More than four-fifths of the manufacturing activity of Maryland in 1937 was concentrated in the city of Baltimore and in adjoining Baltimore County. As to the State the main totals for 1937 (1936 in parenthesis) follow: manufacturing establishments numbered 2683 (2679); their wage-earners totaled 145,932 (117,245); the year's wages amounted to \$156,995,227 (\$108,281,552); the goods produced, inclusive of some products used in further manufacture, attained \$1,095,862,972 (\$741,607,981); the part contributed to this total production by processes of manufacture in Maryland came to \$430,835,614 (\$296,689,318). Corresponding figures for 1937 on Baltimore city and county are: manufacturing establishments, 1835; wage-earners, 105,615; wages, \$124,623,167; goods produced, \$925,760,636; the part of this value contributed by manufacture, \$352,494,611. The city of Baltimore, in turn, exclusive of the outlying county, had in 1937, 1754 establishments, employing 80,836 wage-earners, who received \$86,079,694; and within the city were manufactured \$729,183,999 in goods, to which sum manufacture contributed \$265,185,691.

Less than half of the State's production of manufactures in 1937 was itemized, by the U.S. Census of Manufactures, according to specified classifications. In particular, the data on steel-making and the making of heavy chemicals, both important features of the industry of the Baltimore area, were not detailed. The output of makers of garments of divers sorts aggregated about \$50,000,000; that of meat-packers, \$40,611,524; canning and other preparation of fruits and vegetables, \$30,881,579; the output of tin cans and other tinware, \$37,040,006; shipbuilding, \$17,925,710.

Mineral Production. Coal mining slackened in 1938 in Maryland as elsewhere; mines in the State produced about 1,306,000 net tons of coal, as against 1,549,000, value \$3,315,000, for 1937. Coke, made in byproduct ovens fed with coal chiefly from West Virginia, made 1,105,262 net tons of coke in 1938, as against 1,513,651 in 1937. Iron was made from imported ores in the Baltimore area; blast furnaces in the State shipped 1,219,611 gross tons of pig iron in 1938, as against 1,514,372 in 1937.

Education. Inhabitants of school age (reckoned in Maryland as the period from 5 years to 18), were reported for the academic year 1938-39 as 404,416. The year's enrollments of pupils, in all public schools numbered 296,545; this comprised 233,143 in elementary study and 63,402 in high schools. Outside of these three totals an enrollment of 56,015 in schools unconnected with the public-school system was recorded for the year 1937-38 (the latest for which this particular figure had been issued). The public schools' current expenditure for education in the year 1938-39 amounted to \$21,011,219. About two-thirds of this went to pay teachers, numbering 8901, a year's salaries at an average of \$1597.

Legislation. The General Assembly, convening in regular 90-day biennial session in January, wrote into law a considerable part of a programme of measures recommended by the incoming executive, Governor O'Connor. It enacted a revenue bill designed to add \$8,500,000 to the State's receipts, chiefly by recasting the State's income tax, augmenting the excise on beer and spirits, and laying an impost at 2 per cent on titles to new automobiles. With regard to the distribution of public

authority, provision was made for consolidations among the State's departments; a Legislative Council was established, to function between legislative sessions; a Department of Public Welfare was created; provision was made for reorganizing the People's Court of Baltimore; courts were authorized to make their own rules; a constitutional amendment was initiated, to fill the office of clerk of the Court of Appeals by appointment instead of popular election; and the Department of Engineering was abolished. An issue of \$4,130,000 of the State's bonds was authorized, for the purpose of acquiring Morgan College (at Baltimore, for the education of Negroes) and for additional construction at that college.

Political and Other Events. Governor Nice's Republican administration was succeeded, January 11, by that of Herbert R. O'Connor, Democrat, previously Attorney-General. Mayor H. W. Jackson of Baltimore was re-elected, May 9; in July he advocated heavy increase in the city's taxes, for the covering of deficit incurred in the local expenditure for poor-relief.

A tree of wide note, the Wye Oak, in Talbot County, considered by many to be the finest of white oak trees in the United States, came into possession of the State (September 20) by purchase from private owners. The girth of its trunk was 27 feet 8 inches at the height of 54 inches; the tree's height was about 95 feet.

Officers. Maryland's chief officers, serving in 1939, were: Governor, Herbert R. O'Connor (Dem.); Secretary of State, John B. Gontrum; Treasurer, Hooper S. Miles; Comptroller, J. Millard Tawes; Attorney-General, William C. Walsh.

MARYLAND, UNIVERSITY OF. A coeducational State institution of higher learning at College Park and Baltimore, Md., founded in 1807. The enrollment for the autumn term of 1939 was 4550. The 1939 summer school had an attendance of 1401. The faculty numbered 700. The total income from appropriations and other receipts for the year ended Sept. 30, 1938, amounted to \$3,384,900. The library contained 125,000 volumes. A large construction program, aggregating \$2,500,000, was practically completed President, H. Clifton Byrd.

MASSACHUSETTS, Area and Population. Area, 8266 square miles; included (1930) water, 227 square miles. Population: Apr. 1, 1930 (census), 4,249,614; July 1, 1937 (Federal estimate), 4,426,000; 1920 (census), 3,852,356. Boston, the capital, had (1930) 781,188 inhabitants; Worcester, 195,311; Springfield, 149,900.

Agriculture. Massachusetts harvested 477,300 acres in 1939. Tame hay, the most extensive crop, occupied 396,000 acres, which made 504,000 tons (estimated farm value, \$8,064,000); cranberries, a specialty of the State, grown on 13,700 acres, totaled 13,700 barrels (\$4,882,000); apples gathered for market, 2,420,000 bu. (\$2,057,000); potatoes, on 17,000 acres, 2,635,000 bu. (\$2,635,000); tobacco, 6300 acres, 9,920,000 lb. (\$3,343,000); corn, 38,000 acres, 1,520,000 bu. (\$1,064,000).

Manufacturing. In 1937 the manufacturing establishments in Massachusetts numbered 8619 (in 1935, 8266) and employed 496,036 wage-earners (in 1935, 437,459), to whom was paid \$556,076,859 (in 1935, \$438,416,128); the output of manufactured products amounted to \$2,620,788,793 (in 1935, \$2,060,045,208), of which \$1,256,489,764 constituted value contributed by manufacturing processes (in 1935, \$975,870,612). The importance of the manufacturing industry in the State's subsistence may be expressed by the

high proportion of the population, one person in nine, earning wages in manufacturing, and by the average income per capita, \$125 a year, that such wages represented.

Highly diverse, the manufactures fell into several hundred classifications; some of these, however, while separately conducted, made successive steps in the treatment of the same material. The production of boots and shoes attained the highest individual total for 1937: \$151,994,697, not to count the making of rubber boots and shoes, totaling \$22,761,637 more. Other leading industries connected with apparel were wool-weaving, cotton-weaving, and garment-making. In the first of these three, worsted-weaving occupied 28,884 wage-earners and attained \$145,849,779 in output for 1937; this did not include \$58,870,492, the output of woolen (as distinct from worsted) woven goods. While the cotton manufactories of Massachusetts had met with heavy competition from those in other States, the production of cotton fabrics remained a leading industry; in 1937 it employed 34,414 wage-earners and attained a production of \$87,268,229. The year's output of garments reached an aggregate value not far from \$90,000,000 but distributed among divers classifications.

Another group of manufactures, also furnishing a major source of support to the population, was that producing machinery and its accessories. Establishments making electrical machinery, apparatus, and supplies occupied 25,642 wage-earners and totaled \$151,525,057 in products. Textile machinery to the value of \$45,019,666 was produced. Machine tools and their accessories, inclusive of machinists' instruments of precision aggregated \$41,243,576 in output. The production of miscellaneous machinery amounted to \$50,772,702.

The Bostonian industrial area, comprising Essex, Middlesex, Norfolk, and Suffolk counties did more than half of the manufacturing done in the State. It had in 1937, 5443 manufacturing establishments; these employed 247,684 wage earners and paid them \$281,911,062; its output of products came to \$1,483,827,399, of which sum the processes of manufacture supplied \$677,039,367. Between one-third and one-fourth of these totals were achieved in the city of Boston. Worcester had 516 manufacturing establishments, with 31,134 wage-earners, and produced \$182,777,047. Springfield's production of manufactures amounted to \$94,854,167. Lawrence, the site of a highly developed woolen industry, effected a production of \$114,887,471. Fifteen cities each exceeded \$50,000,000 in their respective totals of manufactured products for 1937.

Education. Massachusetts, reporting for the academic year 1938-39, stated the number of the population of school age thus, in groups according to age: 5 years, to 7 years, 118,270; 7 to 14, 496,915; 14 to 16, 157,559. The year's enrollments of pupils in all public schools numbered 717,365; this comprised 425,094 elementary pupils, 110,035 in junior high schools, and 182,236 in high schools. The year's expenditures for public-school education were listed as \$70,198,883 for support and \$3,538,692 for outlay. The salaries of the teachers, who numbered 26,006, averaged about \$1942 for the year.

Legislation. The General Court met in January in its first regular biennial session, previous sessions having occurred annually. Sitting until August 13, it worked under the handicap of in-

experience in providing for the State's needs over the longer period. Republican in both houses and teamed with a Republican Governor, the Legislature still failed to accomplish what the voters of 1938 had been led to hope—the termination of expenditure beyond the State's means to meet without detriment.

The general appropriation for the next two years, after heavy cuts made by Governor Saltonstall, was established at about \$151,000,000. The total of general and highway fund appropriations, as stated in the press, somewhat exceeded, on an annual basis, that under the Hurley administration, owing to higher provision for service of debt and for reimbursing towns and cities for their poor aid; it carried an additional \$6,500,000 a year for poor-relief and an annual \$4,000,000 for extinguishing hurricane debt.

In legislation to bring the State's revenue up to the scale of expenditure and at the same time to lower the State's assessment on the municipalities, the Legislature, after long opposition to new and heavy special taxes, finally voted an impost of two cents on the package of 20 cigarettes; an increase of the existing surtax on incomes, for one year, to 15 per cent, from five; higher excise on liquor; and changes providing a moderate increase in the State's duties on inheritances. Additional taxation was expected to augment revenue by about \$20,000,000 over the time to the end of the calendar year 1940, some of the imposts being applied on September 1, by the Governor's exercise of his power of emergency.

Other acts of the General Court provided an accounting system intended to help keep expenditures under control; permitted popular votes to authorize cities' issuance of bonds; gave statutory support to the requirement that State contracts be awarded according to competitive bidding; repealed the requirement, suspended by the previous Legislature, that employees contribute 1 per cent of their pay toward the cost of unemployment compensation; made the signatures of 3 per cent of the entire number voting for Governor at the latest election requisite to an independent candidate's having his name put on the election ballot for any State office; abolished the existing Unemployment Compensation Commission and created a successor; granted the State's ratification to the 148-year-old Federal Bill of Rights; and reorganized the State's Civil Service Commission as a new body of five new appointees. The pending Federal Child-Labor Amendment and a renewed motion to repeal the State's requirement that teachers take a prescribed oath were both again rejected. The Legislators being out of pocket by the change to biennial sessions (their pay being by the term), repeated efforts were made to pass, over the Governor's opposition, a bill to raise the compensation to \$3500 for the biennium. The Legislature obtained from the Supreme Judicial Court (July 27) an advisory opinion that House and Senate could provide for summoning a special legislative session, without call from the Governor, by the voice of a majority in each branch.

Political and Other Events. Leverett Saltonstall, who became Governor on January 4, was 46 years old, a native of the State, member of a long-established family, graduate of Harvard, and practising lawyer, who had not frequently run for public office. He had, the support of Republican majorities in the General Court on matters of partisan character, though not invariably on others. The main feature of his first year's performance

of office was persistent pressure to put through a group of onerous and generally unwelcome taxes, the intended means of renouncing deficits and resuming the normal way of operating the government out of revenue. The Legislators' aversion to voting the additional taxes kept the General Court in session for 6½ months and brought about a compromise giving only part of the results that Saltonstall had sought, but nevertheless removing the need for some of the tax on realty imposed locally to meet the State's requirements from the towns. The hostility to a general sales tax, one of the alternatives in the Saltonstall plan of new taxation, was widespread among the public and insurmountable at the time, but a tax on cigarettes provided a fair part of the new revenue sought.

The Governor was successful in helping, by mediation, to bring about the end of a truck-drivers' strike, costly to trade—particularly in perishable foods—in the first month of his tenure.

Proceedings against some of the State's officials holding over from the previous administration resulted in their removal by the Governor and Council. Commissioner of Education James G. Reardon, charged with having made profuse expenditures on the property of some of the public educational institutions, under the pretext of repairing damage done by the hurricane of 1937, was investigated by the Attorney-General. The resulting report indicated that some hundreds of thousands of dollars had been expended uselessly, as far as related to the supposed purpose, in such ways as needless improvement or embellishment of buildings and grounds. Acting on the report, the Governor and Council removed Reardon, replacing him with Walter F. Downey, long the principal of the Boston English High School. Shortcomings in the Department of Public Works were a more serious matter. The Governor appointed a commission of three men of personal standing, Charles P. Howard, Henry L. Shattuck, and John L. Hurley, all serving without remuneration, who made an extended study of the Department's recent acts. Their resulting report, published June 12, ascribed to extravagance, favoritism, laxity, and similar faults in the Department the dissipation of several million dollars of public money. Among conspicuous accusations were the alleged expenditure of about \$1,000,000 for the removal of tree stumps after the hurricane, where \$400,000 would have sufficed; the building of more than 400 bridges without competition for letting contracts; and inflated costs for equipment and repairs. The Council voted the removal (July 26) of William F. Callahan, Commissioner of Public Works, and the Governor nominated John W. Beal to succeed him.

The U.S. Supreme Court, deciding (March 13) the contest of several States for the right to tax the \$36,000,000 estate of the decedent E. H. R. Green (son of Hetty Green) as that of a resident, determined him to have been a resident of Massachusetts; an estimate made at that time put the expected windfall to the State in death dues and other imposts and charges at \$5,000,000. The State's Supreme Judicial Court decided (July 28) in a suit over the "breakage" (marginal sum retained by State and race track in paying a bet under the system of *pari-mutuel*), held the bettor entitled to receive the substantial multiple of the unpaid fraction of a dime, when the winning bet was for a number of times the minimum unit; the "breakage" retained by the State and the race tracks had amounted to \$721,786 for 1938; a com-

putation made for the litigant set the part ascribable to the contested kind of "breakage" at \$456,000; on this basis the State stood to lose about \$228,000 a year or half the sum affected by the suit, race tracks losing the rest.

A site three miles east of Holyoke, comprising about 4300 acres, was chosen in September by the Department of War, for the Northeastern Air Base, to be developed at cost of \$8,000,000, as one of the set of such bases provided by Congress for the aerial defense of the country.

The New York, New Haven, and Hartford Railroad Company, seeking reorganization under Federal bankruptcy law, alarmed southeastern Massachusetts in the spring by declaring that it did not wish to retain control and operation of the leased Old Colony railroad unless allowed to abandon this line's local passenger service. The prospect presented likelihood of hardship to commuting residents of Boston's southern suburbs and to divers commercial interests in towns along the route. Federal Judge Hincks of New Haven gave attention to the plea of bondholders that the cost of maintaining this service was rapidly depleting the company's remaining liquid assets; the Governor was notified that the company was taking steps to abandon the service on September 24. Saltonstall petitioned the Court for time to allow the Legislative commission on transportation to work out proposals that would afford a substitute to abandonment. Hincks then (August 28) authorized service to continue until January 1. The need for abandoning passenger service was attributed by the trustees of the Old Colony Railroad to the upgrowth of travel by automobile over improved highways, which had deprived the line of "considerably more than half" the former passenger traffic. The State appealed from Hincks to the U.S. Supreme Court, which held that Hincks had no authority to allow abandonment. The State's Department of Public Utilities, November 28, ordered the part of the service previously abandoned to be resumed. Trustees of the Boston and Providence Railroad, former leased line of the New Haven and still operated by it under court order, lost (December 19) in Federal Circuit Court, appeal from a court's decision holding the operated line liable for certain resulting deficits; but the amount of these was ordered redetermined.

Boston's school committee voted to admit no entering class to its Teachers' College in the autumn, and thus to start eliminating the college, as necessary economy required. The city felt the depressive force of its tax-rate, \$41.30 for 1938, on valuations regarded as high; the Boston Elevated system had achieved an increasingly heavy deficit in that year, for which the city was financially responsible. In consequence of these obstacles the moderate decrease of the State's requisition on the municipalities, for revenue, did not greatly lessen Boston's difficulties. In Charlestown a reported plan of the Federal Housing Authority for a set of dwellings for the poor, was opposed by persons in business on Bunker Hill Street, which they declared was to be condemned in part of its course and turned into a lawn for the development. Cambridge, seeking higher public revenue, made a proposal through a committee of members of the city council, to Harvard university, that this great tax-exempt property-holder make a voluntary contribution of \$100,000 a year toward the cost of the public services. President Conant declined the proposal in an extended letter of May 16. The controversy was an old one brought up at various

times over 20 years; Lowell when President had started Harvard's habit of making donations in place of taxes on such property as Harvard should acquire after a given date. Sheriff John F. Dowd of Suffolk County was charged with a variety of official abuses and disappeared in November.

Experimental planting of shad in the Nemasket River, at Middleboro, resulted in the catching of a number of full-grown fish in 1939, giving encouragement to the idea of renewing the shad-runs in other small rivers of the State.

Officers. The chief officers of Massachusetts, serving in 1939, were: Governor, Leverett Saltonstall (Rep.); Lieutenant-Governor, Horace T. Cahill; Secretary of the Commonwealth, Frederic W. Cook; Treasurer, William E. Hurley; Auditor, Russell A. Wood; Attorney-General, Paul A. Dever; Commissioner of Education, Walter F. Downey.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. A nonsectarian institution for scientific and technical education in Cambridge, Mass., founded in 1861. The enrollment for the autumn of 1939 was 3100, including 721 graduate students. For the summer session, the registration was 1555. There were 283 members on the faculty and 401 other members on the active staff. The productive funds amounted to \$36,229,975, and the income for the year was \$5,573,608. The library contained 340,000 volumes. President, Karl Taylor Compton, D.Sc., D.Eng., Ph.D., LL.D.

MASSACHUSETTS STATE COLLEGE. The land-grant college of Massachusetts, organized for resident instruction, extension education, research and control services for agriculture; founded in Amherst, Mass., in 1863. The student enrollment in the fall of 1939 was 1650. There were 158 enrolled in the summer session. The faculty numbered 260 including research and extension staffs. The income for the year 1939 amounted to \$1,503,022, of which \$1,133,600 was from State appropriation; \$361,422 from Federal appropriation, and \$8000 from endowed funds. The library contains approximately 114,000 volumes and 160,000 pamphlets and reports. President, Hugh P. Baker, M.F., D.Oec., LL.D.

MAURITANIA. See FRENCH WEST AFRICA.

MAURITIUS. *mô-rish'î-ûs*; *-rish'ûs*. A British crown colony in the South Indian Ocean, comprising the island of Mauritius (720 sq. mi.; pop., 403,718, Jan. 1, 1939) and its dependent islands, 230 to 1200 miles away (87 sq. mi.; pop., 11,774, Jan. 1, 1939).

Port Louis (capital), with suburbs, had 56,576 inhabitants in 1938. The chief products are sugar (321,370 met. tons in 1938-39), copra, aloe fibre, tobacco, and tea. In 1938, imports were valued at Rs33,830,015; exports, Rs26,136,140 (sugar accounted for Rs32,777,092). Foodstuffs, petroleum, cotton piece goods, jute bags, fertilizers, and machinery were the main imports. (The rupee averaged \$0.3659 for 1938.) For the year ended June 30, 1938, revenue totaled Rs17,259,849; expenditure, Rs26,640,996 (includes special expenditure of Rs10,790,721); public debt, £3,093,768; sinking fund, £1,481,028. The government is vested in a governor with an executive council, and a council of government of 27 members (8 ex officio, 9 nominated, and 10 elected by a moderate franchise). Governor, Sir Bede Clifford (appointed May 21, 1937).

MAYNOR, DOROTHY. See MUSIC; NEGROES.

MAYO, CHARLES HORACE. An American surgeon, the son of Dr. William Worrall Mayo

(1819-1911) and brother of Dr. William James Mayo (q.v.), died in Chicago, Ill., May 26, 1939. He was born in Rochester, Minn., July 19, 1865, and was educated at Northwestern University (M.D., 1888). Returning to Rochester he entered the practice of medicine and became associated with his father and his brother. From the time St. Mary's Hospital was opened on Oct. 1, 1889 to 1905, he and his brother did all the operative work of the Hospital. Out of this work and partnership grew The Mayo Clinic.

In 1915, with his brother, he established The Mayo Foundation for Medical Education and Research in affiliation with the Graduate School of the University of Minnesota, endowing it with \$2,800,000. In 1919, they founded the Mayo Properties Association to hold all the properties, endowments, and funds of the Clinic. When the hospital opened in 1889 it had 13 patients and a staff of three—the Mayos. In the course of years The Mayo Clinic became world renowned and the mecca of the medical world. A new large clinic building was opened in 1928. By 1939, the Clinic had a staff of several hundred physicians and surgeons and had had more than a million patients. The careful reports by the physicians are collected yearly in *Collected Papers by the Staff of St. Mary's Hospital, Mayo Clinic, Rochester, Minnesota* (1910 et seq.).

Dr. Charles Mayo served as a member of the State Board of Health and Vital Statistics (1900-02), as health officer of Rochester (1912-37), and on the Rochester School Board (1915-23). During the World War he saw service alternating with his brother, as chief consultant for all surgical services, in the Medical Department of the Army of the United States, Office of the Surgeon General, and was awarded the Distinguished Service Medal, U.S. Army (1920) and the French Legion of Honor (1925). From 1919 to 1936 he was professor of surgery at the Medical School of the University of Minnesota, and from 1915 to 1936, when he was retired as emeritus, he was professor of surgery, The Mayo Foundation, the Graduate School of the University of Minnesota. He was surgeon and associate chief of staff at The Mayo Clinic and surgeon at St. Mary's, Colonial, and Worrall hospitals. In 1930 he retired from surgical practice and in 1933 from executive authority. In 1939 Dr. Mayo made possible to the city of Rochester the Mayo Civic Auditorium by his gift of about one-half the cost.

Dr. Mayo was recognized as the originator of modern goiter surgery and as a pioneer in the surgical treatment of the nervous system. He originated the Mayo operation for varicose veins and the Mayo vaginal hysterectomy. He contributed many refinements in other fields of major and minor surgery, and was a pre-eminent authority in cancer research.

Many honors came to the younger of the Mayo brothers. He received numerous honorary degrees, was a fellow of the American College of Surgeons, of the Royal College of Surgeons, England, of the Royal College of Surgeons, Ireland, and of the Royal Society of Medicine, London, England, and had served as president of the American College of Surgeons (1924-25); of the American Medical Association (1916-17), receiving its gold medal in 1930; of the Society of Clinical Surgery (1911-12), and of the American Surgical Association (1931-32). In 1934 President Roosevelt presented him with a com-

memorative plaque, and in 1936 the Inter-State Postgraduate Medical Association of North America presented him with a bronze medal for his contributions to scientific medicine.

A member of the advisory board of the *Encyclopedia Britannica* and a contributor to *Narkose und Anaesthesia*, with his brother he published *A Collection of Papers Published Previous to 1909* (2 vol., 1912) and contributed to medical journals *Intrathoracic Goiter, with Report of Cases* (1910), *The Phophylaxis of Cancer* (1910), and *Surgery of the Thymus Gland* (1912). His complete bibliography contains more than 400 papers on medical, surgical and allied subjects.

MAYO, WILLIAM JAMES. An American surgeon, the son of Dr. William Worrall Mayo (1819-1911) and brother of Dr. Charles Horace Mayo (q.v.), died in Rochester, Minn., July 28, 1939. Born in Le Sueur, Minn., June 29, 1861, he was educated at the University of Michigan (M.D., 1883). He began the practice of medicine in Rochester in 1883, and in 1889, with his father and brother became associated with St. Mary's Hospital and eventually founded The Mayo Clinic for an account of which see MAYO, CHARLES HORACE.

The careers of the two brothers were so intertwined that the story of one is necessarily the story of the other. During the World War alternating with his brother he served as chief consultant in the Medical Department of the Army of the United States, Office of the Surgeon General, and was awarded the Distinguished Service Medal U.S. Army (1919). Associated with St. Mary's Hospital and The Mayo Clinic, he was known as an especially successful operator in cases of gallstones, cancer, and diseases of the intestinal tract. A skillful surgeon, he was also a great organizer. He retired as a surgeon in 1928 and from executive authority in 1933. In 1915 he and his brother established and endowed The Mayo Foundation for Medical Education and Research and thereafter he took an active part in its guidance and the teaching and training of the young assistants. From 1907 until his death he served on the Board of Regents of the University of Minnesota.

Honors were heaped on Dr. William Mayo. He received honorary degrees from all parts of the world, was a fellow of the Royal College of Surgeons of Edinburgh (Scotland), England, and Ireland and of the Royal Society of Medicine of England. From 1907 until his death he served as a Regent of the University of Minnesota; he was president of the Minnesota State Medical Association (1893-94), the American Medical Association (1905-06), the Society of Clinical Surgery (1911-12), the American College of Surgeons (1918-20), the Congress of American Physicians and Surgeons (1925), and the Inter-State Postgraduate Medical Association of North America (1932-33). He received the gold medal of the National Institute of Social Sciences in 1918, the Henry Jacob Bigelow gold medal of the Boston Surgical Society in 1921, a citation for distinguished service presented by the National Organization and at the same time a commemorative plaque presented by President Roosevelt in 1934, and the gold medal of the American Medical Association in 1930.

His papers published previous to 1909 were collected with those of his brother under the title *A Collection of Papers Published Previous to 1909* (2 vol., 1912), and subsequently he issued

Gastrojejunostomy (1912), *Removal of the Rectum for Cancer: Statistical Report of 102 Cases* (1911), *Jejunostomy* (1912), *Surgery of the Pancreas* (1913), and *Surgical Considerations of Splenectomy* (1915). The complete list of his papers numbers more than 575 articles.

MEAT. See LIVESTOCK.

MECHANICAL ENGINEERS. THE AMERICAN SOCIETY OF. An organization founded in 1880 to promote the art and science of mechanical engineering and the allied arts and sciences. It includes 16 professional divisions—aeronautic, applied mechanics, fuels, graphic arts, hydraulic, iron and steel, machine-shop practice, management, materials handling, oil and gas power, petroleum, power, process industries, railroad, textile, and wood industries—and a professional group on heat transfer. The membership at the beginning of the fiscal year, Oct. 1, 1939, was 14,728. Enrolled in the Society's 117 Student Branches were more than 6000 students.

There were held during the year 643 meetings of the 71 local sections of the Society, as well as 604 meetings of student branches and 4 national meetings of professional divisions. The major meetings, however, were the spring meeting, New Orleans, La., Feb. 23-25, 1939; semi-annual meeting, San Francisco, Cal., July 10-14, 1939; and the annual meeting, Philadelphia, Pa., Dec. 4-8, 1939. The British-American Engineering Congress, scheduled to be held in New York, N. Y., Sept. 4-8, 1939, was canceled because of the war.

The technical committees of the Society, numbering 502 with 1987 members, continued work in research, standardization, and formulation of safety, power test, and boiler codes and rules. Regular publications during 1939 were: *Mechanical Engineering*, the monthly journal; *Transactions* (including the *Journal of Applied Mechanics*), which contains the year's papers of specialized interest and is also issued monthly, with several supplementary sections containing committee personnel and other general information, memorial biographies, and an index to all publications of the Society for the year; and the *Mechanical Catalog and Directory*.

The officers for 1939-40 are: President, Warren H. McBryde; vice-presidents, W. Lyle Dudley, Alfred Iddles, James W. Parker, Kenneth H. Condit, Francis Hodgkinson, J. C. Hunsaker, K. M. Irwin; managers, Carl L. Bausch, Samuel B. Earle, Frank H. Prouty, Clarke Freeman, William H. Winterrowd, Willis R. Woolrich, Joseph W. Eshelman, Linn Helander, Guy T. Shoemaker; treasurer, W. D. Ennis; secretary, C. E. Davies; assistant secretaries, Ernest Hartford, C. B. LePage; editor, George A. Stetson.

The main office of the Society is in the Engineering Societies Building, 29 West 39th Street, New York, N. Y. There is a mid-west office at 205 West Wacker Drive, Chicago, Ill., and a mid-continent office, concerned principally with the problems of the petroleum industry, at 211 Midco Building, Tulsa, Okla.

MECHANIZATION. See MILITARY PROGRESS.

MECKLENBURG. See GERMANY.

MEDICAL ASSOCIATION, AMERICAN. A federacy of the constituent, State and Territorial, medical associations, founded in 1847 to "promote the science and art of medicine and the betterment of public health." Members of the association must be members of constituent associations; those in

good standing, who have qualified as fellows, constitute the scientific assembly of the association. On Dec. 1, 1939, there were 114,063 members, of whom 71,241 were fellows.

The ninetieth annual session was held in St. Louis, Mo., May 15-19, 1939, the house of delegates (in which are vested the legislative powers of the association) and the scientific assembly convening on May 15. At the section meetings leading authorities and investigators in the field of medical science announced and discussed the latest discoveries and methods in treating the sick. The scientific exhibit and the technical exhibit were also of great interest.

The officers elected for 1939-40 were: President, Rock Sleyster, Wauwatosa, Wis.; president-elect, Nathan B. Van Etten, New York; vice-president, Alphonse McMahon, St. Louis, Mo.; secretary and general manager, Olin West, Chicago, Ill.; and treasurer, Herman L. Kretschmer, Chicago, Ill. The official publication is the *Journal of the American Medical Association*, Morris Fishbein, editor. Eight other scientific journals, each dealing with a special field of medicine, as well as *Hygieia*, a health magazine, the American Medical Directory, and the Quarterly Cumulative Index Medicus are published by the association. Headquarters are at 535 North Dearborn Street, Chicago, Ill. See MEDICINE AND SURGERY; SUPREME COURT.

MEDICINE AND SURGERY. Surgical Treatment of the Patent Ductus Arteriosus.

The ductus arteriosus is a short blood vessel which connects the aorta with the pulmonary artery. During fetal life when the organism's oxygen requirements are met by the diffusion of oxygen from the maternal circulation, it provides a compensatory mechanism by which blood can be short-circuited around the lungs, which, because they are partially expanded, present an increased resistance to blood flow. At birth, or shortly thereafter, the ductus normally closes, and all the blood leaving the right side of the heart passes through the lungs where it is aerated. In occasional individuals the vessel fails to close, and there remains a persistent fistula between the aorta and the pulmonary artery, so that blood leaving the left side of the heart under high pressure and normally destined for the general circulation is in part regurgitated into the pulmonary circulation. This vascular anomaly, while not always incompatible with health, is frequently associated with the development of evidences of heart disease. In a series of 92 cases of patent ductus arteriosus uncomplicated by any other congenital vascular defects, observed at post mortem by Abbott, the average age at death was but 24 years. The two most common causes of death in this group were, first, cardiac failure due to the excessive strain placed on the heart by the abnormal arteriovenous communication, and second, the development of a bacterial infection in the ductus, which was responsible for a subacute embolic disease in many respects identical with subacute bacterial endocarditis.

Gross, of the Children's Hospital and the Peter Bent Brigham Hospital, Boston, reported at the annual meeting of the American Surgical Association that he had successfully obliterated a patent ductus arteriosus, by operation, in four cases. He attempted this surgical procedure only after careful anatomical studies on the cadaver and numerous operations on dogs, which convinced him that the procedure was a feasible one.

The operative technique which he worked out is a relatively straightforward one. He opens the chest through an anterior incision, allows the left lung to collapse temporarily, and thus exposes the ductus by a transpleural approach. After cautious and painstaking dissection he is able to isolate the short ductus and to ligate it doubly with strong sutures of silk. This, of course, interrupts the continuity of the vessel and closes the abnormal communication between the systemic and pulmonary circulations. In the cases reported, the ligation has been readily accomplished and the patients have had a remarkably smooth and uneventful convalescence. He has allowed them to be out of bed on the first day after operation, and to be discharged from the hospital in about two weeks. It is not to be supposed, however, that any intra-thoracic procedure of this magnitude is devoid of risk, and Gross specifically warns that the mere discovery of a patent ductus arteriosus is no reason, per se, for advising surgery. The criteria for operation which he has established are as follows: (1) There must be convincing evidence, clinically and roentgenologically, that the ductus is patent; (2) One must be able to exclude, with reasonable certainty, the presence of associated anomalies of the heart or great vessels, in which case the continued patency of the ductus might be a compensatory process; (3) And, finally, "one should have an indication that the ductus is enlarging, that the danger of bacterial endarteritis is high, or that the heart is carrying an increased burden."

The results of the operation in these four cases have been very striking. After ligation of the ductus, the loud murmur associated with the regurgitation into the pulmonary artery disappears, the blood pressure returns to normal levels, and the overactive heart beat is reduced to one of normal intensity. In two instances there was reduction of the size of the heart. All the children have done well, have returned to school, and "bid fair to have an improved cardio-vascular system." (*Annals of Surgery* 110:321, 1939).

There is no question but that this work of Gross is a fundamental contribution to surgery. By it he has offered a definitive method of treatment for one variety of congenital heart disease which should prevent the dangers of subacute bacterial endarteritis and cardiac failure. Increasing experience will make it possible to select more accurately those individuals with a patent ductus arteriosus by whom the risks of a major operative procedure should be assumed, in order that the serious or even tragic complications sometimes associated with the conditions may be avoided.

Heparin and Sulfapyridine in Subacute Bacterial Endocarditis. Kelson and White, of the Massachusetts General Hospital, have made observations which suggest that the combined use of heparin, an anticoagulant, and sulfapyridine may be of value in the treatment of subacute bacterial endocarditis. This disease, an infection of the heart valves usually caused by the streptococcus viridans, is usually seen only in patients who have previously suffered valvular damage from rheumatic fever. It is characterized anatomically by the presence of small masses of fibrin and bacteria (so called "vegetations") on the valve leaflets, which tend to break off into the blood stream and so to cause plugging or embolism of small arteries in various parts of the body, notably in such organs as the spleen, kid-

neys, and brain. Clinically, there is protracted fever, signs of embolism (hematuria, enlargement of the spleen, petechial hemorrhages in the skin and mucous membranes), and a course progressively down hill, so that death usually results within a few months to a year. Recovery, once signs of embolism appear, occurs only with the greatest rarity. During the disease the offending organism may be cultured from the blood. Treatment has been quite ineffective.

The rationale of combined heparin-sulfapyridine therapy is simple. The organisms are susceptible to sulfapyridine *in vitro*, and patients treated with sulfapyridine alone frequently show marked, though only temporary, improvement. It is thought that sulfapyridine is relatively ineffective clinically because organisms on the heart valves are covered by layers of fibrin, a result of the clotting of blood on ulcerated areas of the valves, and thus are protected from the circulating blood with its phagocytic leukocytes. It is hoped that further clotting can be prevented by the intravenous administration of heparin. This is a potent, non-toxic, anti-coagulant isolated from the liver by Murray and Best, of Toronto, which has been shown to be effective in the prevention of intra-vascular clotting in a variety of conditions. By the prevention of the deposition of further clot, one might attempt to "(1) restrict the nidus and culture medium for bacterial growth, (2) prevent embolism from the freeing of fresh thrombus, and (3) check the growth of the vegetations so that proliferating fibroblasts may fill in the areas thus limited." (Kelson and White, *J.A.M.A.* 113, 1700, 1939).

The method employed by Kelson and White was, in brief, to administer heparin by a continuous intravenous drip for 14 days. During this same period, as well as one week before and one week following it, sulfapyridine was given by mouth. Frequent studies of the clotting time were made, and the dosage of heparin varied in order to maintain it at about five times the normal level.

The results of this method of treatment in seven cases have been reported by Kelson and White. In four, the treatment was of too short duration to produce any demonstrable effects. Treatment with heparin was discontinued in two of these cases because of the rapid course of the disease which terminated fatally in two weeks or less, and in the remaining two because the particular samples of heparin used proved to be toxic. The three remaining patients who were able to take heparin for more than one week showed striking improvement. At the time of the report they had been free from evidences of the disease for 19 weeks, 18 weeks, and 4 weeks respectively after discontinuing treatment. It remains to be seen, of course, whether these striking remissions will be maintained, but the fact that spontaneous afebrile intervals of more than five weeks duration are of extraordinary rarity during the course of such an endocarditis (occurring but once in 246 control cases studied by Kelson and White) suggests very strongly that the results obtained in these three cases are significant.

The use of an anti-coagulant in such an embolic disease as subacute bacterial endocarditis carries with it the hazard of intensifying the hemorrhage which may result from the rupture of a vessel after embolization. Indeed in one of the cases reported by Kelson and White, death resulted from the formation of an intra-cranial clot (subdural hematoma). In a single case similarly

treated by Friedman, Hamburger, and Katz, of the Michael Reese Hospital, Chicago, the fatal issue was brought about by hemorrhage into the ventricles of the brain from an area of softening, apparently the result of a cerebral embolus. The risk then is real, but seems one worthy of assumption in such a desperate situation with an almost hopeless prognosis.

Kelson and White point out that the chances of healing the ulcerated vegetative processes on the heart valves would seem best early in the course of the disease when they are still small, and for this reason stress the importance of early diagnosis. As long as no effective treatment was available, the establishment of a diagnosis of subacute bacterial endocarditis was important only in so far as the prognosis was concerned. Now that it would seem that some hope may be offered patients with this disease, its early establishment is a matter of great practical concern.

It is, of course, too early to raise sanguine hopes that another dread disease has been conquered. It will require the cumulative experience of numerous observers over a considerable period of time to define the merits and hazards of this new treatment, and to estimate the permanent results which one may expect to achieve by it. Kelson and White aptly conclude: "Neither blind to the failures nor prematurely boastful of the apparent successes, we shall continue patiently to gather further experience to learn just how good our combined therapy may prove to be and to better our technic. This preliminary report is presented because of the interesting method of attack, and because that attack has in these first few months given more promise than any other method we have ourselves used or heard of in the past."

Stilbestrol—A Synthetic Estrogen. In 1923 Allen and Doisy reported the isolation of a hormone from the ovary which when administered to ovariectomized animals was capable of producing anatomical changes in the generative tract similar to those normally observed during so-called heat, or estrous. Since this fundamental discovery much has been learned concerning the chemical nature and the physiologic effects of female sex hormones. It has been shown that several related substances of known chemical composition have potent estrogenic properties, and some of these have been made available for clinical use. These materials have proved to be of value in the treatment of untoward symptoms sometimes associated with the menopause, of gonorrheal and senile vulvo-vaginitis, and to a lesser degree, perhaps, in the treatment of certain other syndromes resulting from ovarian hypoactivity. In spite of its unquestionable value, estrogenic therapy has had certain practical disadvantages. The most important of these is its high cost—a result of the fact that the estrogens are derived commercially from biological sources (commonly from the urine of pregnancy) and must be carried through expensive processes of extraction and purification. Another difficulty is that the estrogens now available lose much of their potency when given by mouth, and, therefore, ordinarily are administered intramuscularly, by which route they are 10 to 20 times more effective. A new synthetic estrogen promises to offer definite advantages in these two respects.

In 1938 a group of English investigators, Dodds, Goldberg, Lawson, and Robinson, synthesized a new compound, *diethylstilbestrol*, which

they said was capable of high estrogenic activity, lost little of its potency on oral administration, and could be prepared relatively cheaply. (*Lancet* 1, 1389, 1938). This new estrogen, interestingly enough, differs markedly in its structure from the naturally occurring estrogens, and does not contain a phenanthrene ring system found universally in the natural estrogens, and formerly thought essential for estrogenic activity.

Although numerous reports from abroad have attested the remarkable estrogenic potency of stilbestrol, the Council of Pharmacy and Chemistry of the American Medical Association has stated that more careful studies of its possible toxic effects must be made before it can be recommended for general clinical use. The results of three such preliminary studies are now available, and may be briefly recorded.

Shorr, Robinson, and Papanicolaou, of Cornell and the Rockefeller Institute for Medical Research, found in the treatment of 44 patients that stilbestrol was actively estrogenic, producing in menopausal women the same anatomical changes in the generative tract as the natural estrogens, and like them was effective in relieving the subjective symptoms of the menopause. They further confirmed the finding that stilbestrol was remarkably effective when given by mouth. It lost less than one-half its activity by this route, in contrast to the natural estrogens which may lose from 90 to 95 per cent. In their series, however, stilbestrol therapy resulted in a high percentage of undesirable side effects. Eighty per cent of the patients showed, to a certain degree, some of the following toxic symptoms: anorexia, nausea, vomiting, abdominal distress, nervous phenomena, and skin rashes. And furthermore, in contrast to the European reports, the gastro-intestinal symptoms seemed to be of central origin and occurred with parenteral as well as with oral administration. It was their feeling, therefore, that until more had been learned concerning the significance of these side effects, the use of stilbestrol should be confined to experimental studies.

In contrast to these findings, Buxton and Engle, of the College of Physicians and Surgeons, Columbia University, reported that in 16 of 17 patients treated from 1 to 6 months, no evidence of toxicity could be attributed to stilbestrol. In one patient there were urinary manifestations possibly attributable to this estrogen. Mild nausea occurred in four of the 17 patients, and two of these had vomiting after the first treatment. Since rather detailed laboratory studies were made in all the cases, with uniformly negative results, they were inclined to attribute little importance to the occasional mild gastro-intestinal symptoms mentioned above.

MacBryde, Freedman, and Loeffel, of the Washington University School of Medicine, likewise reported that their experience with stilbestrol in the treatment of 37 patients had been quite favorable and that no serious toxic symptoms had been produced. Nausea occurred in eight patients, and vomiting in three, but reducing the size of the dose or changing the route of administration gave prompt relief. In no case was it necessary to withdraw the preparation because of toxic manifestations. (*Journal of the American Medical Association* 113, 2312-2320, 1939).

It may be seen, then, that these preliminary studies with stilbestrol, while not uniformly fa-

vorable, nevertheless give promise that this new estrogen may be of great value clinically. Perhaps more important is the fact that the door has been opened for the development of other and better synthetic estrogens. The availability of materials of such great estrogenic activity places a new responsibility on the physician, since their indiscriminate use may not be entirely without danger. Perhaps the chief hazard in the prolonged use of estrogens in susceptible patients is the possibility of the induction of cancer, since it has been clearly shown in animal experiments that prolonged treatment with massive doses of estrogens may produce definite carcinogenic effects. Like all potent drugs, the new estrogen must be used cautiously and only upon very definite indications.

Pneumonectomy in the Treatment of Cancer and Suppurative Disease of the Lung.

Certainly one of the most important advances in surgery in the decade just ended has been the demonstration that the removal of a lung is a feasible operation in man, and further that pneumonectomy offers an excellent chance of cure in chronic suppurative diseases of the lung as well as a reasonable hope of cure in selected instances of carcinoma of the lung. To appreciate the significance of this achievement it is necessary to know that the first successful excision of an entire lung in man was performed as recently as 1931 by Nissen, in Germany, and that it was not until 1933 that Evarts Graham, of St. Louis, first reported a pneumonectomy for carcinoma of the lung with survival of the patient for more than a brief period after operation. Added importance is lent this advance in thoracic surgery by the recent recognition of the high incidence of carcinoma of the lung. Not only is it not a rare tumor, as previously supposed, but rather a fairly common one. It now seems likely that about 10 per cent of all cancers are to be found as tumors of the lung, and it is interesting that almost all of these are thought to arise from the epithelium of the bronchial tree, and hence are designated as bronchiogenic carcinomata. Because a high proportion of these tumors arise from the large primary bronchi, they tend, in growing, to block the bronchus, and, therefore, cause collapse of the lung distal to the site of the obstruction. Not infrequently infection of the lung may occur behind the bronchial block, and the carcinoma, therefore, may masquerade as a suppurative process. Perhaps the most important aids in the clinical diagnosis of cancer of the lung, since it symptomatically presents no characteristic features, are, first, visualization of the interior of the trachea and the first portion of the large bronchi by means of the bronchoscope, and second the use of the X-Ray. By bronchoscopy, one may often see the intra-bronchial tumor and remove a small piece of tissue for microscopic confirmation of the diagnosis. In X-Ray films of the chest either the tumor or such presumptive evidence of its presence as collapse of a portion of the lung may usually be demonstrated.

What, then, in the present state of our knowledge, are the risks of pneumonectomy and the prospects of cure? Concerning the first question, a fairly exact answer can be given, but not enough time has elapsed to permit any very accurate estimation of how many patients who have survived operation will be alive and free from cancer five years later. According to Overholt, of Boston, who has recently completed a review of

the literature, 110 cases of pneumonectomy have been recorded, 62 having been performed for cancer and 48 for benign lesions, chiefly suppurative disease. The mortality, since the first successful case recorded in 1931, has been 65 per cent for the malignant group and 24 per cent for the benign group. The percentage of survivors in the group with cancer, though small, still represents a very creditable salvage of patients suffering with an otherwise fatal disease. Of course, it must be realized that in many patients with carcinoma of the lung, operation may be deemed inadvisable because of age, poor general condition, or obvious extension of the growth beyond the lung. Also, in the cases subjected to thoracic exploration, perhaps half will be inoperable because of mediastinal invasion. And, finally, of the patients who have no apparent metastases and survive pneumonectomy, a certain number will die from cancer which, though undetectable, had already extended beyond the lung at the time of operation. These considerations, though depressing, are the same ones which must be faced when dealing with malignant disease at any site. Though one can only guess as to what the ultimate rate of five-year cures may be (and this figure may, of course, increase with added experience and refinements in technique) it is perhaps not too much to say, as does Overholt, that it would seem that a sufferer from cancer of the lung has "as good a chance, or possibly a better chance, than a patient with cancer of the stomach which required total gastrectomy for its eradication."

In the same paper, Overholt reports his personal experience with pneumonectomy in 22 cases. He was able to report the unusually low mortality rate of 33 per cent in 15 cases of carcinoma of the lung. (*Journal of Thoracic Surgery* 9, 17, 1939). In seven patients undergoing pneumonectomy for benign lesions, he had no operative deaths—truly a remarkable record.

At the least, then, it may be said that cancer of the lung no longer belongs in the category of hopeless diseases—that its victims may be offered a chance of cure which, though small, compares favorably with that of other serious forms of malignant disease. The thorax has proved to be the last of the great body cavities which the surgeon may successfully enter in the pursuit of malignant neoplasm. And there is reason to hope that by the end of the next decade very much more favorable results may be reported. The factors upon which further improvement will be based are two: First, the earlier diagnosis of cancer while it is essentially a local disease; and second, technical improvements which will increase the safety of operation.

Treatment of Addison's Disease with a Synthetic Crystalline Hormone. Addison's Disease is a syndrome characterized by weakness, low blood pressure, gastro-intestinal symptoms, and pigmentation of the skin, caused by tuberculosis of the adrenal glands or by atrophy of the adrenals from other causes. In the past, its course has usually been fatal. In the last decade, however, two important advances in its treatment have been made. The first of these consisted of the discovery of the profound disorder of salt and water metabolism with which the disease is associated. Loeb, Harrop, and Wilder were among those who from 1932 to 1936 pointed out that the addition of large amounts of sodium salts to the diet, together with a reduction of the intake of potassium salts, was of marked value in com-

batting this metabolic disorder. The second advance consisted of the isolation of extracts from the cortex of the adrenals which were capable of maintaining life in adrenalectomized animals, and which proved to be of considerable value in the treatment of patients with Addison's Disease. This work was carried out by Swingle and Pfiffner, by Rogoff and Stewart, and by Hartman and his associates. (See *NEW INTERNATIONAL YEAR BOOK*, 1930; p. 463 f.)

Because of their high cost and markedly variable potency, commercial extracts of the adrenal cortex have proved to be but moderately satisfactory in clinical use. The isolation of a series of active crystalline steroids from the adrenal cortex has been accomplished during the past three years, and quite recently Reichstein, a Swiss investigator, has been able to synthesize one of these steroids, desoxycorticosterone acetate, in sufficient quantities for clinical use. During 1939 three groups of American workers, headed by Thorn, at Johns Hopkins, Ferrebee at Columbia, and Cleghorn at the University of Toronto, have reported quite favorably on the use of this new synthetic material.

Thorn and his co-workers studied six patients with Addison's Disease in whom they implanted, subcutaneously, pellets of desoxycorticosterone acetate weighing from 50 to 150 mgms. each. In each instance there followed "striking and continued improvement." This was evidenced not only by a gain in body weight, an elevation of the blood pressure, and a return to normal activity, but also by the demonstration by laboratory methods that the underlying metabolic disorder had been controlled—that is to say, the normal relations between sodium and potassium in the blood and urine were restored, and the volume of the circulating blood, previously decreased, returned to normal levels. Thorn believes that the method of implanting pellets of the hormone subcutaneously is the "most efficacious and economical method available for administering adrenal cortical hormone." The advantages claimed for this method are that (1) the hormone is slowly absorbed and, therefore, exerts a prolonged effect; (2) less of the hormone is required by this route, and (3) the necessity for daily injection of the hormone is obviated. It is advisable, however, before beginning this form of treatment to measure the patient's requirement of the hormone as determined by daily injections of a solution in oil. (*Johns Hopkins Hospital Bulletin* 64:339, 1939).

Ferrebee and his associates studied in great detail 13 patients with Addison's Disease, treated by the daily subcutaneous or intra-muscular injection of salts of desoxycorticosterone, and reached conclusions which were in general agreement with Thorn's. The results of their very careful study may be briefly summarized. They found desoxycorticosterone esters to produce striking clinical improvement, "far greater than has resulted from any therapy hitherto advocated." This improvement was associated with a retention of sodium and water (both of which are lost in abnormal amounts in the untreated disease). They point out that there is great variation in the amount of the hormone required to alleviate the symptoms of adrenal insufficiency in different patients, and warn that great caution must be exercised in the administration of the hormone, since excessive amounts may lead to abnormal water retention, with the development of edema and signs of heart failure. (*J.A.M.A.* 113: 1725, 1939).

Cleghorn and his colleagues compared the effects of desoxycorticosterone acetate with that of an aqueous cortical extract in the treatment of four patients. They found the new synthetic crystalline hormone to have several indisputable advantages. Patients were found to have an increased sense of well-being on desoxycorticosterone acetate, and blood pressure and blood chemistry findings were restored approximately to normal. Furthermore the hormone could be given in small injections and was less painful than the extract. Because of its slow absorption from an oily solution they believed it to be of less value than the extract at times of severe crisis with vascular collapse. There is some evidence, they think, that desoxycorticosterone acetate may not provide complete replacement therapy. (*Canadian Medical Association Journal* 41: 226, 1939).

The matter may be summed up practically by saying that before the synthesis of the crystalline hormone few patients received really adequate hormone therapy. Because of the cost, inconvenience, and pain associated with the large amount of extract required, few patients were actually restored to normal health and could return to work. Results so far obtained with the synthetic hormone suggest that these desirable ends may now be frequently attained.

Vitamin K. Experiences with Vitamin K during 1939 have amply confirmed its value in the prevention of hemorrhage associated with a decreased level of prothrombin in the blood. While it has been of especial value in the prevention of bleeding in jaundiced patients, and has, therefore, very appreciably decreased the risks of surgery in this group, it has also been used in several other conditions in which a deficiency of prothrombin has been found to exist. These include hypoprothrombinemia (1) associated with the ingestion of a diet inadequate in Vitamin K, (2) occurring in newborn infants, (3) caused by inadequate intestinal absorption following short-circuiting operations on the small bowel, severe diarrheal diseases, etc., and (4) following injury to the liver (cirrhosis, atrophy, neoplasm, etc.). (Snell, *J.A.M.A.* 113: 2056, 1939).

Important work has also been done on the chemical identification of the vitamin. A series of related quinoid compounds have been isolated from alfalfa extract and putrefied fish meal, rich natural sources of Vitamin K, which have proved to have anti-hemorrhagic properties. The structural formula of one of these, Vitamin K₁, has been established by synthesis as 2-methyl-3-phytyl-1, 4 naphtho-quinone by Doisy and his associates in St. Louis, and by Fieser and his co-workers in Boston. This compound has been shown to be effective in two clinical cases of obstructive jaundice by Frank, Hurwitz, and Seligman. (*New England Journal of Medicine*, 221, 975, 1939).

New Developments in the Treatment of Syphilis. Nearsphenamine. A group of workers at the Mount Sinai Hospital and the Department of Health, New York City, have presented an interesting new plan for the treatment of early syphilis. These investigators, Hyman, Chargin, Rice, and Leifer, have suggested that it may be possible to eradicate entirely an early syphilitic infection by the administration of massive doses of nearsphenamine by a continuous intravenous drip in as short a period as five to seven days. (*J.A.M.A.* 113: 1208, 1939).

Although Ehrlich, to whom we are indebted for the first really effective chemotherapeutic agent,

salvarsan or arsphenamine, had hoped to effect a total sterilization of infected tissues, it soon became apparent that doses of the drug large enough to be effectively spirocheticidal, were much too toxic to be used clinically; so that it became necessary to give smaller doses at frequent intervals over a period of months or even years. As Dr. Rice points out, "even the most modern methods for rendering the disease permanently non-communicable require a minimum of from eight to ten months of treatment." And, of course, cure in any individual case requires much more prolonged treatment.

Hyman, Chargin, and Leifer were led to believe from their previous studies that many of the "reactions" associated with the intravenous injection of a variety of materials resulted not from the inherent toxicity of the substance injected, but rather from the fact that it was injected too rapidly. They surmised that this "speed shock" might be the real cause of some of the toxic manifestations resulting from the intravenous injection of the arsphenamines. Should this concept prove to be valid, it might be possible, they postulated, to administer safely massive doses of arsphenamine, given very slowly by means of a continuous intravenous drip, and thus approach Ehrlich's dream of a "therapia sterilisans magna." At any rate in 1933 they treated 25 patients with recently acquired syphilis in this manner, giving four grams of nearsphenamine in five days. There were no severe toxic reactions, and manifestations of clinical improvement were "rapid and dramatic." The results of treatment in this small group were reviewed again in 1938, and were considered satisfactory enough by a group of eminent syphilologists, who made a critical study of the matter at Dr. Rice's request, to warrant a more extensive investigation. This investigation has been supervised by a committee of which Dr. Charles C. Leib is chairman, and has been carried out through the collaboration of the Mount Sinai Hospital, the New York Hospital, Bellevue Hospital, the United States Public Health Service, and the New York City Health Department.

At the time of the report, 86 male patients with primary or early secondary syphilis had been treated. The average dose of nearsphenamine was 4.1 grams, and the average duration of treatment was approximately five days. As a rule, about one gram of nearsphenamine in 1500 cubic centimeters of 5 per cent dextrose was given in 15 hours each day. The only major toxic symptoms were cerebral in origin, and occurred in two cases. In one, they proved to be of little consequence, but in the second, an unfortunate negro male of 18, repeated convulsions occurred and death resulted on the third day, apparently caused by a hemorrhagic encephalitis.

The remaining toxic phenomena were relatively non-serious. Fifty-seven per cent of the patients had a primary elevation of temperature and 63 per cent a secondary one. Fifty-two per cent experienced toxic skin rashes, usually associated with the secondary fever. Peripheral neuritis developed in 38 per cent, but did not prove to be severely incapacitating although it lasted as long as four to six months. Careful studies of kidney function showed no significant evidence of renal injury, and although certain tests showed slight impairment of liver function, there was no clinical evidence of liver damage. It was concluded from studies of the blood that no important changes resulted. That no significant retention of nearsphen-

amine resulted was evidenced by the fact that 60 per cent of the injected arsenic could be recovered from the urine and feces during the period of hospitalization.

The clinical results were striking. There was prompt healing of both primary and secondary lesions, and in as short a period as 24 hours, spirochetes could no longer be demonstrated by dark field examination. Patients experienced a sense of well-being, and frequently had improved appetites and gained in weight.

The serological results, as determined by the Wassermann reaction, were also favorable. Seven patients were lost from observation and one died, so that only 78 could be followed. In four of these there was clinical or serological relapse, and in seven more there was a tendency toward reversal of the Wassermann reaction, although it had not become entirely negative. None of this latter group showed any clinical signs of persistent infection.

In 67 patients, constituting 86 per cent of those adequately followed, complete reversal of the serological reaction occurred, the Wassermann reaction becoming entirely negative. These patients, as far as could be determined by clinical or serological tests, were free of evidences of syphilis. A review of the smaller group in which results had been less favorable, showed that the members comprising it had sought treatment at a later date after acquiring the infection than had the members of the larger group, and further that on admission they showed more strongly positive Wassermann reactions, a point, of course, which strongly emphasized the desirability of early treatment.

The authors conclude that "the massive dose method of chemotherapy in early syphilis apparently yields immediate clinical and serologic results that equal the best results that are obtainable" by present methods of continuous treatment over long periods with alternating courses of the arsenamines and the heavy metals (bismuth and mercury). However, because they believe the factor of toxicity may still be reduced, they emphasize that "this method of treatment must still be considered in an experimental phase and should not be employed for routine clinical use until greater safeguards have been established."

Should extended experience in a group large enough to be statistically significant, observed over a period long enough to allow observations concerning the prevention of the late crippling manifestations of the disease, confirm the value of this method of treatment, there can be but little question that an important advance has been made. It will be of great economic advantage to the patient and the community, and from the public health point of view should aid in the control of the spread of syphilis by rendering a large proportion of the patients non-infectious in a few days, while at the same time isolating them from intimate contact with others during the period of their infectiousness.

Sobisminol. During 1939 a soluble bismuth preparation intended for oral administration, as well as for intra-muscular injection, was accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in the group of New and Nonofficial Remedies. This product, a complex organic compound resulting from the interaction of sodium bismuthate, tri-isopropanolamine, and proplene glycol, was developed by P. J. Hanzlik of Stanford University, and has been given the nonproprietary designa-

tion of "sobisminol." Favorable clinical experiences with its oral administration have been reported by two groups of workers in California—Meninger and Barnett of San Francisco, and Scholtz, McEachern, and Wood of Los Angeles. It is the first bismuth preparation which has been shown to be effectively spirocheticidal when given by mouth.

According to the Los Angeles group, sobisminol in daily doses containing 0.84 grams of bismuth will bring about involution of active syphilitic lesions of the skin. It also seemed especially effective in relieving the symptoms of late syphilis of the central nervous system. In spite of frequent mild gastro-intestinal symptoms, the drug was in general well tolerated and no serious reactions occurred after its use. It could be given in daily doses over a long period without any cumulative toxic effect. Experience with its use has not been extensive enough to say that the oral administration of sobisminol may be safely substituted for the injections of other forms of bismuth in the routine treatment of early syphilis, but the presumption is that this will prove to be the case. Oral therapy, while offering economic advantages to the patient, is very apt to be misused, and is associated with the risk of "self-treatment." To be effective it demands the honest and intelligent co-operation of the patient. (*J.A.M.A.* 113: 2219, 1939).

National Health Program. On January 23, President Roosevelt sent a message to Congress proposing a national health program, in which he said "the objective of a National Health Program is to make available in all parts of our country and for all groups of our people the scientific knowledge and skill at our command to prevent and care for sickness and disability; to safeguard mothers, infants, and children; and to offset through social insurance the loss of earnings among workers who are temporarily or permanently disabled."

Following in the wake of the President's message Senator Wagner of New York, on February 28, introduced in the Senate a bill for carrying out some of the phases of the National Health Program, in which an expenditure of \$80,000,000 was called for during the first year with progressive increases during the next 10 years. The aim of this bill was to establish, expand, and improve State programs for "(1) child and maternal care, (2) general public health services and investigations, (3) construction of needed hospitals and health centers, (4) general programs of medical care, and (5) insurance against the loss of wages during periods of temporary disability." It was proposed that this bill, if enacted, should be called the "National Health Act of 1939."

Extensive hearings on the proposed act were held before the sub-committee of the Committee on Education and Labor, but the 76th Congress adjourned sine die, August 5, without having taken any action on the bill. The Senate Committee on Education and Labor did, however, submit a preliminary report in which it expressed the view that legislation along the general lines of the bill proposed by Senator Wagner was necessary to strengthen the health services of the nation and to make provision for progressive and effective improvements of health conditions. It promised to submit a report to the next Congress.

Widely divergent views were expressed by various persons who testified at the committee hearings. While strong support was lent the bill by

Doctor Thomas Parran, Surgeon General of the United States Public Health Service, who said that the Wagner Health Act was a logical outgrowth of the Social Security Act, and that it represented the most comprehensive approach ever made to the diverse and serious problems of health and medical care for the Nation, and by other representatives of governmental agencies and social service groups, opposition by accredited representatives of the American Medical Association was expressed. A committee headed by Dr. Walter F. Donaldson, to whom the Wagner National Health Bill had been referred for consideration, reported at the annual meeting of the American Medical Association in St. Louis, on May 17, that "the Wagner Health Bill as judged by the considerations that have been here presented, is inconsistent with the fundamental principles of medical care established by years of scientific, professional medical experience, and in the opinion of your committee it is therefore contrary to the best interests of the American people." Representatives of the Association who appeared before the Committee on Education and Labor, objected to the bill on the grounds that it did not safeguard the continuance of private practice as it is now carried on; that it made no provision for the use of vacant beds now available in church and community hospitals; that it would tend to make Federal aid for medical care the rule rather than the exception, and perhaps chiefly on the ground that the bill provided for supreme Federal control.

The Association advanced a platform of its own in regard to medical care, the provisions of which are as follows:

1. The establishment of an agency of the Federal government under which shall be co-ordinated and administered all medical and health functions of the Federal government exclusive of those of the Army and Navy.
2. The allotment of such funds as the Congress may make available to any state in actual need, for the prevention of disease, the promotion of health, and the care of the sick on proof of such need.
3. The principle that the care of public health and the provision of medical service to the sick is primarily a local responsibility.
4. The development of a mechanism for meeting the needs of expansion of preventive medical services with local determination of needs and local control of administration.
5. The extension of medical care for the indigent and the medically indigent with local determination of needs and local control of administration.
6. In the extension of medical services to all the people, the utmost utilization of qualified medical and hospital facilities already established.
7. The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability.
8. Expansion of public health and medical services consistent with the American system of democracy.

Anti-Trust Proceedings Against the American Medical Association. Considerable interest was aroused during the past year by proceedings brought under the Sherman Anti-Trust Act against the American Medical Association, the Medical Society of the District of Columbia, and certain other medical societies, a group of hospitals in Washington, D. C., and a number of individual defendants. (See *LAW under Causes Célèbres*; SUPREME COURT.) The grounds for the indictment were that the defendants had illegally restrained Group Health Association, Inc., "in its business of arranging for the provision of medical care and hospitalization to its members and their dependents on a risk sharing prepayment basis," and, furthermore, had restrained "the doctors serving on the medical staff of said Group

Health Association, Inc., in the pursuit of their callings."

Group Health Association, Inc., is a non-profit co-operative association of governmental employees in the District of Columbia falling within the low income group, who banded themselves together in order to procure medical services on a prepayment basis. The action was brought because physicians employed by the Association had been expelled from the Medical Society of the District of Columbia, and had been denied consultation with its members by the Society. Furthermore, physicians employed by the Association had been removed from the staffs of certain Washington hospitals, and had been denied the privilege of caring for patients admitted to those hospitals.

After indicating the nature of the indictment and the form of conspiracy charged, Mr. Justice Proctor of the District Court of the United States for the District of Columbia, on July 26, 1939, sustained demurrers to the indictment. The essence of Judge Proctor's reasoning was that the practice of medicine is not a trade, and, therefore, not within the purview of the Act. The Department of Justice, which had initiated the proceeding against the defendants, sought to have the Supreme Court accept jurisdiction on an appeal directly to that Tribunal without following the usual course through the Circuit Court of Appeals. The Supreme Court, however, on Oct. 23, 1939, refused to allow this extraordinary procedure, although it was unopposed by counsel for the defendants, the reason assigned being that no constitutional issue was involved, and, therefore, no reason to depart from customary judicial procedure existed. At this point the case rested at the close of the year.

Its ultimate disposition will be a matter of interest, because it will, no doubt, have an important bearing upon the subsequent relationship between physicians who may be employed by like groups offering medical care on a prepayment basis, and organized medicine. Similar experiments in health insurance are being carried out in other parts of the country, notably in Massachusetts, by Health Associates, Inc. Unquestionably, one important factor in their success or failure will be their ability to obtain adequate and competent medical services in communities where their activities will be opposed by the local units of organized medicine.

See BIOLOGICAL CHEMISTRY; CHEMISTRY under *Medical Miscellany*; FOOD AND DRUG ADMINISTRATION; PUBLIC HEALTH SERVICE; VETERINARY MEDICINE; VITAL STATISTICS.

H. WALTON COCHRAN.

MEMEL, mā'mēl. A territory on the east coast of the Baltic, ceded by Lithuania to Germany on Mar. 23, 1939. Area, 1099 square miles; population on Jan. 1, 1938, 152,660 including 38,927 in the port and city of Memel. The inhabitants are predominantly German-speaking.

Memel Territory was severed from Germany by the Treaty of Versailles to provide Lithuania with a seaport under an autonomous regime. Lithuanian troops seized it from the French garrison Jan. 15, 1923, and by the Memel Statute of May 8, 1924, signed by Lithuania, Britain, France, Japan, and Italy, it was created an autonomous territory under Lithuanian sovereignty. Although Germans controlled the elective Diet and Directorate (government) of the territory, their au-

onomous rights were restricted during the period 1926-38 by Lithuanian governors acting under martial law. With the advent of the Hitler regime in Germany, the majority of the Memel Germans joined the Nazi movement and agitated for the return of Memel to the Reich. Under German pressure, the Lithuanian Government abolished martial law in Memel on Nov. 1, 1938 and left the Memel Nazis in control (see 1938 YEAR BOOK, p. 420).

History. The steps taken late in 1938 to eliminate Lithuanian influence and return the territory to the Reich were carried to a rapid conclusion in 1939. On January 14 the Lithuanian Governor, Viktoras Gailius, appointed Willy Bertuleit, second in command of the Memel Nazi party, as head of the Directorate. Without awaiting this formal recognition of Lithuanian acquiescence to Berlin's demands, the Memel Nazis under Dr. Ernst Neumann had proceeded with the Nazification of the territory. Nazi Storm Troops replaced the Lithuanian police. A "security detachment" of several thousand men was organized to propagate and defend Nazi ideas. The trade unions were replaced by a Nazi Labor Front. Lithuanian officials and civil servants in the territory were replaced by Memel Germans. Economic measures were taken to favor the German as against the Lithuanian and Jewish inhabitants.

Reunion with the Reich. Following the annexation of Bohemia and Moravia by the Reich on March 15, the Memel Nazis began mass demonstrations for reunion with Germany. The Lithuanian Foreign Minister hurried to Berlin, where on March 20 he received an ultimatum threatening occupation of Memel by German troops unless the territory was ceded within four days. The Lithuanian Government accepted this demand on March 21 but declared Germany's action illegal and announced that it would consult the signatories of the Memel Statute. The German Government then threatened to invade all of Lithuania unless this statement was repudiated and Memel surrendered immediately.

The Lithuanian Government capitulated and on March 23 signed a treaty ceding Memel to the Reich. In return Lithuania received a free port zone in Memel harbor. The treaty bound Lithuania and Germany not "to proceed against the other by force nor to support an attack from a third side against one of the two sides." That same day Hitler arrived in Memel harbor at the head of the German fleet and took formal possession of the territory, which was incorporated in the administrative district of East Prussia. Pending the establishment of a free zone the German authorities permitted Lithuanians to use Memel harbor. On April 18 the Lithuanian State Railways transferred to the German State Railways all its railway lines (85.69 miles), equipment and rolling stock within Memel territory.

An annex to the German-Lithuanian treaty provided for the operation of the Lithuanian free port zone in Memel. The German harbor board was to conclude a contract for utilization of a section of the port, under a 99-year lease, with a company in which Lithuanian capital predominated. The cost of the lease was to be considered as defrayed by the Lithuanian Government's past investment in improving the Memel port works.

See LITHUANIA under *History*.

MEN'S CLOTHING. See GARMENT INDUSTRY.

MENTAL HYGIENE. See PSYCHOLOGY.

MERCHANT MARINE. See SHIPBUILDING; SHIPPING; EUROPEAN WAR.

MERCURY. See QUICKSILVER; METALLURGY.

MERIT SYSTEM. See CIVIL SERVICE COMMISSION; LAW under *Constitutional Law*.

METALLURGY. Announcement that the Aluminum Company of America will spend several million dollars on a new plant at Vancouver, Wash., to produce aluminum from power generated at the new Bonneville Dam was perhaps the most interesting news of the year to the metallurgical industry. Use of cheap hydroelectric power generated at the various United States Government dams that have been in process of construction has attracted much thought from metallurgists, and this is one of the first concrete results. It is the first sale of Bonneville power to an industry that is new to that part of the country. The initial capacity of the new plant will be 15,000 tons of aluminum per year, and the power will cost \$17.50 per kilowatt-year.

Cheap power should attract other metallurgical industries to the Northwest, utilizing possibly the phosphate deposits of Idaho and Montana, the chrome deposits of Oregon and northern California, and low-grade iron ore, clay, magnesite, and other minerals as yet undeveloped in that area. The accompanying table shows the amount of power required for the production of certain mineral products. At the Bonneville Dam this power can be had at \$14.50 per kilowatt-year, or 1.65 mills per kilowatt-hour, an especially attractive rate to the electrometallurgical industries.

ELECTRIC POWER REQUIRED FOR THE PRODUCTION OF CERTAIN METALS AND MINERAL PRODUCTS

Product	Kilowatt-hours required per ton finished product
Aluminum	20,000 to 25,000
Zinc and Cadmium	2,000 to 3,000
Copper (by leaching)	1,700 to 2,600
Magnesium	13,000 to 14,000
Steel	500 to 750
Ferroalloys (chrome, etc.)	5,000 to 10,000
Abrasives and Refractories	
Fused Alumina	2,000 to 2,500
Silicon Carbide	6,000 to 8,000
Silicon	12,000 to 14,000
Graphite	7,600 to 8,000
Phosphoric Acid	5,000 to 6,000
Sodium (metallic)	13,000 to 15,000

To utilize domestic ores with the assistance of cheap power, the U.S. Bureau of Mines has been carrying on extensive experiments on electrometallurgy, as a result of which a commercial method for the production of electrolytic manganese has been developed which is being exploited by the Electro Manganese Corporation at Knoxville, Tenn. Experiments on the production of metallic magnesium from magnesite indicate that one or the other of the following methods offer the greatest possibilities of success: (1) Direct reduction of magnesium oxide by carbon, and purification of the product by distillation; or (2) production of anhydrous magnesium chloride by treating a mixture of magnesium oxide and carbon with chlorine. Magnesium metal is then made by electrolysis of the fused chloride.

Owing to its use in lightweight alloys, production of magnesium metal in the United States has increased from less than 300 tons in 1928 to 2400 tons in 1938. This all came from brines, but the growing importance of the metal in industry has created much interest in its production from domestic ores. Experimental work indicates that

concentration of magnesite ores by flotation is feasible.

Mercury. Interest in the metallurgy of quicksilver has been stimulated by the tripling of the price of this metal by the European producing monopoly within the last few months. No fundamental change has taken place in practice during the last two decades, but the designs of mechanical furnaces, dust collectors, and condensing systems have improved, as has the type and grade of fuel used for firing the furnaces. Practically all American ore is low in grade and it is usually hand-sorted, sometimes screened, and occasionally concentrated by jigging or flotation, by which an ore running, say, 5 lb. of quicksilver per ton may be raised to 12 to 15 lb. Ordinarily it costs too much to grind ore to flotation size to warrant use of that process on the entire mill feed. Distillation of the quicksilver may be conducted either in a rotary kiln, similar to that used for making cement clinker, or in multiple-hearth furnaces of the mechanical rabbling type. The former is a sloping revolving tube, lined with fire-brick, usually with a fuel-oil burner inserted at its lower end. Dimensions may vary from an internal diameter of 1½ by 16 feet, with a capacity of about 8 tons of ore per day, to 7 by 100 feet or larger, with a capacity of about 250 tons. The hearth furnaces, which employ oil firing on one or more hearths, also may vary greatly in size, from 4½ to 21½ feet in diameter, and with from four to 16 hearths. Gas may be substituted for oil as fuel, and the use of butane gas is a new and promising development.

Both types of furnaces make much more dust than the old hand-fired furnaces. Cyclone dust collectors have proved superior to other types for this service, usually with a blower following the dust collector. For condensing the mercury, glazed sewer tile has recently been generally adopted, but the use of metal pipes has advantages that are coming to be recognized. "Duriron" and "Corrosiron" have proved practical, though relatively heavy; stainless steel has been successfully used, and Monel metal is being tried. Cooling of the condensers may be by either air or water.

Tin. Experiments in the metallurgy of tin have been conducted by two American companies during 1939 and as result, commercial plants should be in operation during 1940. That of the American Metal Company will use an electrolytic process, as did the American Smelting & Refining Company during the World War. Details of the process to be used by the other company, the Phelps Dodge Corporation, have not been announced. Both companies will treat Bolivian tin concentrates, which, under normal peacetime conditions, can probably be more cheaply smelted in England, as has formerly been done.

Copper. Copper-smelting equipment in the United States has been enlarged by the addition of the new Hurley, New Mexico, smelter of the Nevada Consolidated Copper Corporation, which was blown in in May, 1939. The reverberatory furnace there installed is an unusually large one, 28½ by 126 feet, fired by natural gas through multi-jet burners. The waste-heat boiler plant is most modern, consisting of two 1260-h.p. boilers installed just back of the reverberatory, with no uptake flue. These boilers utilize about 60 per cent of the fuel burned in the furnace and reduce the exit gases to a temperature of 410 degrees F. In this plant, the trend toward elimination of roasting furnaces is again exemplified, the concentrates and fluxes being charged direct. Conveyor belts are

used wherever possible, with vibrating conveyors down each side of the furnace for charging. Tracks and cars are conspicuous by their absence around a modern copper smelter.

In copper refining, a novelty has been the installation of a pilot plant for the production of electrolytic copper direct from blister copper anodes.

Lead. In lead metallurgy, the trend toward larger equipment continues. In Australia, sintering machines have been in operation with beds 10 feet wide; in the United States, 63 inches is a fairly standard width, with some remaining at 42 inches. Return of the smoke and dust through the sinter bed is becoming general practice, as is the recovery of metallic lead from the wind boxes, owing to the high lead content of the concentrates. Dilution is necessary in some plants, and lime sand from beach deposits has proved ideal for this purpose in Utah. A big saving in oil consumption for ignition has been secured at one plant by mounting a single small oil-burner on a mechanically-driven swinging arm passing to and fro across the bed.

In lead refining, gaseous chlorine is now being used for the removal of tin as tetrachloride, which is vaporized and condensed. Tin can also be removed by violent agitation of the molten metal with lead oxide. One company has developed the electric smelting of lead concentrates, with a complete sintering plant, furnace, and kettle house, producing five tons of drossed bullion a day from a high-zinc charge, most of the zinc being volatilized.

Zinc. Horizontal-retort zinc distillation plants continue to increase their production per retort, one plant regularly producing over 100 lb. of metal per retort daily. Also, the 32- or 28-hour period of retort firing has increased the useful life of the refractories used, simplified the labor problem, and increased zinc extraction. Work on the reduction of zinc in gaseous suspension continues on a semi-commercial scale at one plant. In electrolytic zinc refining, a silver-lead alloy has become the standard anode at most plants. Anodes of cast lead coated with lead electrolytically deposited by the Betts process are used at one plant.

Ore Dressing and Hydrometallurgy. Further headway is seen in the use of rod mills to fill the gap between intermediate crushing and coarse grinding. They eliminate dusting and the closed-circuit operation of fine crushers, and they supply a finer product to the ball mills, which then may use smaller grinding balls, say 2½ inch. Low-level-discharge ball mills have proved their efficiency in recent extended tests; a pool of pulp from 1 to 1½ feet deep is maintained in the mill.

The popularity of jigs in grinding circuits continues, especially for the recovery of gold and tin, and finer material is thus recovered than was formerly thought possible. One improvement in jig design involves a specially designed cam to actuate the plunger, thereby prolonging the positive upward flow of pulp over a predetermined time cycle and eliminating the peak flows that needlessly disturb the bed. Tabling practice may be improved by the use of dispersants. It is contended that pulps of great fineness may be effectively tabled into distinct mineral fractions if properly dispersed, as by the addition of a little sodium silicate to the pulp.

Some extremely deep flotation cells are now being manufactured, some with a submergence depth of nearly 8 feet, though the impeller for circulation and aeration is placed near the surface. A few new flotation reagents have appeared, but most of

them are not of general application. Flotation remains a process of concentration that cannot be standardized. The machines, reagents, and method to be used on a specific ore to get the best results must be determined by experimentation aided by as much experience as possible.

An old metallurgical problem in the treatment of an antimony-gold ore at the Santo Domingo mine, in Peru, has apparently been successfully solved. The concentrates are high in sulphur and ordinary roasting takes place at a comparatively high heat, forming gold compounds that are insoluble in cyanide solution so that only a 50 or 60 per cent extraction has been possible. By directing the hot calcined concentrate through a pipe into a closed tank of water, and leading the large volume of resultant steam into the multiple-hearth roasting furnace used in the process, and at the same time closely regulating the draft and fuel, the temperature could be held at from 600 to 700 degrees F., and practically no insoluble compounds were formed. The soluble antimony compounds would foul the cyanide solution, so those soluble in an acid solution were removed by washing in the closed tank already mentioned. After dewatering, the pulp was washed in lime-water, and then ground in a ball mill in cyanide solution. A table with a "high-grade" riffle was put in closed circuit with the ball mill to remove coarse gold for amalgamation. Thus over-all recovery was raised to better than 90 per cent on this refractory ore.

One new idea in the cyanidation of gold seems to have possibilities. It consists in the atomization of cyanide pulp by pumping it into a large tank under high pressure, which is thought to be superior to mechanical or air agitation.

An interesting novelty in the mechanism for classifiers and thickeners is a robot lifting device which automatically raises the rakes clear of the segregating pulp pool in case of failure in the main power line. The device operates from a battery circuit and is driven by a small direct-current motor that is cut in when the power line fails. Sticking of the rakes in the pulp in case of a shutdown is thus obviated.

EDWARD HODGES ROBIE.

METEOROLOGY. Chapman has made a very interesting survey on the lunar tide in the atmosphere. From time immemorial the tides in the oceans have been familiar to mankind, but Laplace, in 1825, seems to have been the first to try to determine, from barometric observations, whether the moon produces a tide in the air as it does in the sea. He used eight years of Paris barometric observations, but without success. In 1828 Bouvard used 11 years of Paris data, and in 1843 Eisenlohr used 22 years, but they too were unsuccessful. Lefroy in 1842, from 17 months' bi-hourly observations at St. Helena, first determined this air-tide. In 1852 Elliot determined it at Singapore from five years' data and in 1871 Bergsma determined it at Batavia. These three stations are all in the Tropics where barometric changes resulting from the irregular passage of anticyclones and depressions are almost unknown, or at least very small; also in the Tropics the air-tide, according to theory, should be larger than elsewhere. These combined reasons explain why the tropical air-tide was readily determined, whereas until 1918 all efforts to find it in meteorological records outside the Tropics were unsuccessful. In 1918 Chapman determined the Greenwich air-tide from 64 years' hourly data, by rejecting all days (about two-

thirds the whole) on which the barometric range exceeded 0.1 inch. High tide occurs twice on each lunar day at Greenwich, just *before* the moon's upper and lower transits, and its range is less than 0.001 inch of mercury.

In 1918 the air-tide was thus known at three tropical and one non-tropical station; since then its value has been determined at 50 more stations, the computations at 28 of these stations having been made since 1930.

Several meteorologists have worked on the lunar air-tide since 1918, but to Chapman and his co-workers is due most of the results. The 50 stations for which the air-tide has now been computed are fairly well distributed over the globe. At the majority of stations, the time of high tide occurs somewhat after lunar transit, though at some stations it occurs before the moon's meridian passage. Generally speaking, the range of tide is highest in the low latitudes and least in the high latitudes, just as the tide theory suggests, though there are some notable exceptions. For example, Chapman finds that the range of air-tide at Melbourne is about twice that of Buenos Aires, though these two stations have approximately the same latitude. Some specially striking irregularities in the geographical distribution of the tide are found in North America. Along the eastern part from St. John and Montreal southward to Bermuda and Mexico City, the air-tide has a normal and regular distribution with nearly the same phase at all stations within this area. At Dodge City, Kansas, the phase is fairly regular, but the amplitude is smaller than at the more easterly stations in the same latitude. Going to the west of North America, the tide becomes increasingly abnormal, either in the smallness of its amplitude or in its unusual phase, or in both these respects. At Victoria, Vancouver, and Portland, the amplitude is very small; at Salt Lake City it has an early maximum, and at San Francisco and San Diego the time of high tide is two hours before the lunar transit. At Mt. Wilson and Mt. Hamilton, which are close by but at much higher elevations, the time of high tide is after the lunar transit.

One of the most interesting deductions of Chapman about the lunar air-tide is that the low frequency pressure oscillations (about 705 per annum) set up in the atmosphere by the moon are adiabatic and not isothermal. In this, Laplace assumed they would be isothermal and thus fell into the same error which he himself corrected with reference to Newton's theory of the velocity of sound. But sound waves have several hundred oscillations per second, and this was why Laplace corrected Newton's determination of the velocity of sound. Chapman points out that because of the great length of the lunar tidal wave (half-way round the earth), the heat generated by tidal compression cannot travel this immense distance in the time available, nor can the heat escape upward or downward sufficiently fast, hence there is adiabatic compression.

Fred L. Whipple has worked since 1936 with two patrol synchronized cameras at the Harvard College Observatory for the purpose of photographing meteors simultaneously. One camera is at Cambridge and the other is about 24 miles away at the Oak Ridge Station, the long base line affording accurate determination of meteor heights by triangulation. Whipple's principal aim in this work was to obtain precise spatial orbits of sporadic meteors in order to find out if they belong to the solar system or not. But his observations

also provide meteorologists with accurate data about a part of the atmosphere beyond the reach of sounding balloons. Whipple has used his observations to determine the densities of the earth's atmosphere at heights of from 50 to 100 kilometers. No sounding balloon has ever attained a height exceeding 36 kilometers. The principles involved in finding the air density from meteor trails are that the integrated light of a meteor with an observed velocity is a direct measure of its original mass and the instantaneous luminosity is proportional to the rate of loss of meteoric matter, the light being emitted when atoms evaporated from the body by friction collide with the air molecules. In this way the diminishing mass of the meteor can be computed from observations for each instant; from the observed velocity the deceleration can be computed, and from these the resistance of the air can be computed, and, in turn, the density. Atmospheric densities can also be computed independently from the observations by using the height of maximum brightness of a meteor. A third independent check is to use the time of beginning of the photographic trail. All three methods give reasonably consistent results. These density determinations are of decided interest, because they provide a method of computing atmospheric temperatures at heights beyond the reach of balloons.

The advent of aviation caused meteorologists to study atmospheric visibility, a feature previously ignored. Visibility observations have been taken and recorded for upward of 15 years, and H. L. Wright has just made a study of the visibility observations in the British Isles. He finds that sea-salt nuclei are much larger than combustion nuclei and play a large part in the determination of visibility. Visibility can be measured in (1) the International Code of Visibility, which simply gives the distances between which objects are visible, (2) the extinction coefficient, and (3) a new unit proposed by Gold—the nebule—which is a screen having a transmission coefficient $x = \sqrt[100]{1/1000}$. It is quite immaterial whether the obscuring matter in a screen is compressed within the thickness of a disc, as in a visibility meter, or expanded to a thickness equal to a thickness equal to the distance of the object viewed. All that matters is that the total number of nebules in the screen is the same in all cases. In a normal obscuring atmosphere the material is spread out evenly between the observer and the object or light which is viewed, and the visibility may be measured in nebules per unit distance. Thus the international code of 6 means that objects are visible at 4 km., but not visible at 10 km., and this corresponds to 10 nebules per km. Wright gives the mean visibility conditions in nebules per kilometer for numerous stations in the British Isles and for the different seasons. It will be interesting to find if salt nuclei play as important a role in visibility in other parts of the world as Wright has found for the British Isles.

Pierce has completed an exhaustive analysis of the meteorological conditions accompanying the New England Hurricane of 1938. He used all available upper air and surface data, and constructed constant level and isentropic charts for each day during the progress of the hurricane. On the maintenance of the energy of this storm Pierce points out that, when the hurricane acquired the deep polar air mass to the west of its path, there was abundant energy supplied by the potential energy of air mass distribution. Most tropical hurricanes on striking land receive no such potential

energy due to air mass distribution and are easily dissipated.

Practical Meteorology. Applied meteorology made remarkable progress during the year. The outstanding events were the initiation of four weather maps a day and the opening of about 20 radiosonde stations. Of lesser importance were the initiation of "breakfast broadcasts" and of trans-Atlantic weather service for aviation.

In the earliest years of the U.S. Weather Bureau three synoptic weather maps were drawn daily based on simultaneous observations made eight hours apart. About the end of the 19th century, the three maps a day were reduced to two, these being based on observations made at 7:30 a.m., and p.m., 75th meridian time. The two maps a day program continued until the year 1939, when maps were begun to be drawn from observations made at 1:30 a.m. and p.m., 75th meridian time, as well as the two times mentioned above. This makes possible a closer study of the movements of air masses with a corresponding improvement in the accuracy of weather forecasts.

Beginning in 1898 the U.S. Weather Bureau began upper air observations of temperature, humidity, and pressure by means of kites. Kites continued to be used until 1933 when they were displaced by airplanes. In 1938 the use of radiosondes was begun at six stations, and to these were added 18 more in the U.S. proper during 1939. (There were two more established in Alaska and two in the West Indies.) These upper air observations make available, both for the daily forecaster and the research meteorologist, a vast amount of data, always desired in earlier years, but unfortunately not obtainable.

The 1:30 a.m. weather map has made possible a new feature—the breakfast broadcast—by which a forecast of the day's weather is announced to the general public. Thus, people engaged in industries which are affected by weather can plan their work in the light of the latest weather information.

Had peace continued in Europe, the transatlantic airway weather service would have been a notable step forward, but on account of the war the commerce benefiting from this new service is limited.

The regular publication of mean monthly isentropic charts was begun in August. These charts show the mean air flow over isentropic surfaces. All in all, the U.S. Weather Bureau is giving a very good account of the \$6,156,870 appropriated to it by the Congress, and further improvement in forecasts is expected.

During the year there were international conferences of meteorologists at Montevideo, Uruguay, in February, and at Berlin, Germany, in June. The first was a conference of Regional Commission III to discuss meteorological problems affecting the two Americas. The other was the regular biennial meeting of the International Meteorological Committee, and also sessions of the International Commissions of Aerology, Maritime Meteorology, and Aeronautical Meteorology. Besides these two gatherings, which were concerned with administrative matters of exchanging weather information and the like, there were other meetings of meteorologists devoted to the scientific phases of the subject. Foremost among these was the meeting of the Section of Meteorology of the International Geodesic and Geophysical Union at Washington in September—the first time this international body has ever met in America—and the first joint meeting of the Royal and American Meteorological

Societies in Toronto in August. The war in Europe reduced the attendance of the meeting in Washington.

The war in Europe has reduced the number of vessels sending reports of weather observations to the United States. While this is causing temporary hardships to meteorology, it should be borne in mind that it was due to the lack of extensive weather reports from foreign countries that led Bjerknes in Norway to a more intensive study of the local Norwegian weather reports and to the inception of air mass analysis—one of the good things to come from the World War.

In the year 1939 there were 138 tornadoes reported in the U.S. with a death toll of 98 and property losses of about \$5,000,000.

There were five tropical hurricanes in the North Atlantic during the year, none of which were of unusual importance.

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RICHMOND T. ZOCH.

METHODIST CHURCH. The year 1939 showed a continued forward movement in the growth of the Church. While all reports have not been tabulated, there will be an increase in Membership of 50,000 or more.

The outstanding work of the year was the consummation of the union of three Methodist bodies into the Methodist Church at the Uniting Conference held in Kansas City, Missouri, April 26 to May 10. Nine hundred delegates from the three bodies met to complete the act of union and to formulate rules for the government of the New Church. Many voices declared that the three groups could not be brought into agreement, but from the opening Communion service the Uniting process was working in the hearts of the Delegates. As they worshiped together, as they worked together in Committees, as they discussed together the questions on the floor of the Conference, as they mingled Socially between sessions, the differences began to disappear and the points of common interest increased and quietly, as the working of the leaven in the meal, the fact of Union grew until that which could not be done became an established fact and the three Methodisms became one.

The head of the gavel that was used to open the first session on April 26 and to close the final session on May 10, was made of oakwood taken from the tree on St. Simon's Island off the coast of Georgia under which John Wesley preached in 1737. The head of another gavel used was of English Oak taken from the first Chapel that John Wesley built at Kingswood, Bristol, Eng-

land, in 1739 and the handle was of wood from the original John Street Church, New York City, dedicated in 1768, a union of the first Methodist structures in England and America. Other gavels used were from Historic Methodist Buildings and Mission fields of the Church.

It was the afternoon of May 10, 1939. The work of the Uniting Conference had been completed. All was in readiness for the service of "Declaration of Union." More than 12,000 people were in the Auditorium as the service opened at 7:45 p.m. The enthusiasm increased as the service moved forward through the Worship period, the address by Bishop Edwin Holt Hughes, the Senior Effective Bishop in the United States of the New Church, through the Declarations to the climax as the Bishops and Delegates, with uplifted hands, declared—"To the Methodist Church thus established we do solemnly declare our allegiance, and upon all its life and service we do reverently invoke the blessing of Almighty God. Amen."

On the motion by Judge H. H. White of Louisiana, seconded by James R. Joy of New Jersey and Judge Harry Shaw of West Virginia "that the Declaration of Union which has been adopted section by section, be now adopted as a whole" Bishop John H. Moore said, "I shall take the vote, first standing in favor of the adoption, and after you are seated I will take the vote for those who oppose the adoption."

"If you will adopt this Declaration of Union as a whole, you will stand and lift your right hand." The entire Conference arose. "If you oppose the adoption of this Declaration, will you stand and lift your right hand. No one stands. The vote is Unanimous."

At 8:59 p.m. May 10, 1939, Bishop Moore said, "The Declaration of Union has been adopted. The Methodist Church is. Long live the Methodist Church."

At once the Greater Kansas City Messiah Chorus, conducted by Mr. Powell Weaver, burst into the majestic strains of the Hallelujah Chorus by George Frederick Handel.

After the singing of the Hymn "O God, Our Help in Ages Past" and a motion for adjournment made by Thomas D. Ellis of Georgia and seconded by E. H. Cherrington of Ohio, the Uniting Conference stood adjourned with the benediction pronounced by Bishop John L. Nuelsen of Geneva, Switzerland, and the Methodist Church began its United Task of helping to bring in the Kingdom of God in the Earth.

After the organization of the Methodist Church each Conference of the three uniting bodies met, heard the reports for the year, and voted to dissolve the conference of the former body and organized the Conference as a part of the Methodist Church. The first General Conference of the Methodist Church will be held in Atlantic City, New Jersey, beginning Apr. 24, 1940. This General Conference will be followed by meetings of the Jurisdictional Conferences beginning in June.

The Methodist Church faces its task in 1940 with 34 Effective, 2 Missionary, 7 Central Conference and 17 Retired Bishops, and more than 7,900,000 Members. See LAW.

METROPOLITAN MUSEUM OF ART. See ART MUSEUMS; ART EXHIBITIONS.

MEXICO. A Federal republic of North America, comprising 28 States, 2 Territories, and the Federal District (City of Mexico and 11 surrounding villages). Capital, Mexico, D. F.

Area and Population. Area, 760,290 square

miles; population, 19,479,000 (estimated) on June 30, 1938 (16,553,000 at 1930 census). The racial division of the population (1930 census) was: Indians, 4,630,880; whites, 2,444,466; mixed race, 9,040,590. Living births registered in 1938 numbered 764,544 (39.2 per 1000); deaths, in 1937, 457,795 (23.9 per 1000); marriages in 1938, 123,521 (6.3 per 1000). The population of the city of Mexico in August, 1939, was estimated at 1,447,000 (1,234,000 in 1930). Populations of other towns (1930): Guadalajara, 175,539; Monterrey, 132,577; Puebla, 114,793; Mérida, 95,015; San Luis Potosí, 74,003; León, 69,238; Tampico, 68,126; Veracruz, 67,494; Torreón, 66,001; Aguascalientes, 62,244.

Defense. Military service in the active army or National Guard is compulsory. Strength of the active army in 1938, 3405 officers and 38,430 men; navy, 6 escort vessels, 10 coast guard patrol vessels and minor craft. The air force in 1939 comprised about 170 pilots and 70 planes. Defense appropriations for 1939 totaled 92,984,458 pesos.

Education and Religion. The 1930 census showed 59 per cent of the population to be illiterate. Federal, State, and municipal educational appropriations for 1939 aggregated \$40,245,000. See EDUCATION.

Roman Catholicism is the predominant faith, but the 1917 Constitution provides for strict state control of the Catholic and other churches. All foreign priests were expelled in 1926 and Federal and State anti-church laws reduced the number of native priests officiating to about 350 in 1936. In subsequent years a number of State governments permitted the churches to reopen. Churches and other buildings used for religious functions were nationalized in 1936.

Production. Agriculture, mining, stock raising, and manufacturing are the main occupations. Yields of the chief crops were (in metric tons, except as noted): Wheat, 322,400 in 1938; barley, 69,700 in 1938; corn, 1,634,700 in 1937; rice, 74,600 in 1937-38; potatoes, 68,500 in 1937; coffee, 37,000 in 1937-38; cane sugar, 352,500 in 1938-39; tobacco, 14,300 in 1937; cotton, 73,700 in 1937. Henequen, chickpeas, alfalfa, vegetables, and fruits are other crops.

The value of mineral production in 1938 (excluding coal and petroleum) was 557,180,000 pesos (514,016,000 in 1937). Production of the chief minerals in 1938 was (in metric tons): Petroleum, 5,654,000 (6,888,000 in 1937); coal, 893,141; silver, 2520; lead, 282,369; zinc, 172,218; copper, 41,851; antimony, 8069; cadmium, 762; iron, 111,093; molybdenum, 806; white arsenic, 8894; bismuth, 186. Gold production was 28,734 kilograms; mercury, 293,683 kilograms. The industrial census of 1935 showed 7241 manufacturing establishments employing 215,003 persons and with a total production value of 1,038,685,000 pesos.

Foreign Trade. Imports in 1938 were equivalent to \$109,694,000 (\$170,317,000 in 1937); exports, \$186,064,000 (\$247,638,000). Conversions to dollars were made at average peso exchange rates of \$0.222 in 1938 and \$0.2775 in 1937. The United States supplied 57.7 per cent of the 1938 imports (62.2 in 1937); Germany, 18 (16.1). Of the 1938 exports, the United States took 67.4 per cent (56.2 in 1937); United Kingdom, 9.4 (11); Germany, 7.7 (9.4). Leading 1938 exports were: Silver, 170,802,299 pesos; gold, 152,714,822 pesos; lead, 108,993,447 pesos; zinc, 79,-

996,894 pesos; copper, 38,851,620 pesos. See IMPORTS AND EXPORTS.

Finance. Actual Federal revenues in 1938 were 444,611,000 pesos and expenditures 499,000,000 pesos. The above figures do not include the government's obligation to the Bank of Mexico, which stood at 146,900,000 pesos plus 27,800,000 pesos of road bonds at the end of 1938. The 1939 budget estimated expenditures at 445,875,614 pesos; 1940, 442,000,000. The foreign debt (in default since 1914) was officially estimated at 1,133,995,000 pesos, including unpaid interest, as of July 1, 1937. The recognized internal debt as of Dec. 31, 1936, was 434,386,000 pesos (principal, 288,765,000; interest, 145,621,000). See History.

Transportation. The principal railway system, the National Railways, was nationalized in 1937 and turned over to the railway workers' union for operation in 1938. Railway lines in 1936 extended 14,252 miles. In 1939, 1034 miles of line were under construction. Highways totaled 56,923 miles (641 miles built in 1938). There were (1939) 23 air lines operating over 15,343 miles of route (12,751 miles local and 2592 miles international). Improvements in port works at Progreso, Acapulco, and Mazatlán were in progress in 1939.

Government. The Constitution of 1917, as amended in 1929 and 1933, vests executive power in a President elected by direct popular vote for six years and ineligible for re-election. Legislative power rests with an elective Congress of 2 houses—a Chamber of Deputies of 172 members, elected for 3 years, and a Senate of 58 members, renewed every 6 years. Former President Plutarco Elías Calles, acting through the National Revolutionary party which he organized in 1928, controlled the Federal government and Congress until President Lázaro Cárdenas (inaugurated Nov. 30, 1934) broke the power of Calles in 1935-36. For developments in 1939, see History.

HISTORY

Internal Developments. President Cárdenas continued during 1939 the resolute course of internal economic and social reorganization undertaken in preceding years (see 1938 YEAR BOOK, p. 452 f.). The extensive foreign oil properties expropriated by the Mexican Government on Mar. 18, 1938, were retained despite the powerful opposition of the oil companies and the United States and British governments. The distribution of large landed estates to peasants on a communal basis was extended. Further measures of a nationalistic character were enacted regulating the status and property holdings of foreigners. But the economic depression that gripped the country in 1938, due at least in part to the government's policies, continued during 1939. Opposition to the Cárdenas programme appeared to be increasing, while dissension spread among the supporters of the President. With the progress of the political campaign for the Presidential election set for July, 1940, sporadic political strife flared out with growing intensity. Mexico seemed once more to be nearing the brink of revolution and civil war.

The Oil Issue. Efforts of the United States and other foreign oil companies to regain control of their properties or obtain immediate and "fair" compensation were defeated in the Mexican courts. The Supreme Court on April 24 declined

to grant an injunction against government occupation and exploitation of American-owned oil wells and properties not mentioned in the expropriation decree of Mar. 18, 1938. On December 3 the same court upheld the constitutionality of the 1938 decree. Meanwhile decisions of French and United States courts provisionally overrode legal efforts of the oil companies to prevent the sale in those countries of petroleum from expropriated wells.

The boycott organized by the oil companies against sales by the Mexican Government in foreign markets worked havoc with the petroleum industry. In 1938 shipments abroad declined 41 per cent in volume from 1937, while the value declined from 162,000,000 pesos in 1937 to 79,700,000 in 1938. The government was obliged to dispose of its oil below the world market price.

Nevertheless new markets for the expropriated oil were opened by barter deals with Germany and Italy early in 1939. A Brazilian firm on July 4 announced an agreement to purchase 5,500,000 barrels of crude oil annually from the Mexican Government. In his speech of September 1 to the Mexican Congress, President Cárdenas declared that the government was breaking through the companies' boycott abroad and that the outlook for the industry was bright. He admitted that the government had been unable to pay the 133-per cent increase in wages and social-welfare benefits awarded petroleum workers by the Labor Board previous to expropriation. But he said that when the oil could be sold on a cash basis at higher prices full payment of the wages fixed in the Labor Board award would be possible.

The outbreak of the European war in September deprived Mexico of the German petroleum market and set back the government's plans. New efforts were made to dispose of the oil in the United States. At the end of November it was reported that production of the expropriated wells exceeded both consumption in Mexico and exportation by about a million barrels monthly. Unrest was said to be on the increase among oilfield workers, who feared further curtailment of production and payrolls.

Negotiations for a settlement of the controversy were opened by Donald R. Richberg, representing the oil companies, with President Cárdenas in March. They discussed a proposal drafted in the State Department at Washington for the administration of the oil properties by a 9-man board. Three members were to represent the Mexican Government, 3 the oil companies, and 3 were to be "neutral" members chosen from a panel selected by the American and Mexican governments. Cárdenas insisted, however, that his government must retain control of the industry, while the oil companies flatly rejected the State Department's suggestion.

Three alternative proposals advanced by the Mexican Government were likewise unacceptable to the companies. They were: (1) joint government-company exploitation of the expropriated fields and division of the earnings; (2) delivery of oil for export to the companies by the government at a discount permitting the companies to amortize their investment in the fields and obtain a profit, and (3) payment by the government of a cash compensation after appraisal of the value of the expropriated properties.

In his speech of September 1 the President stated that the government had reserved 20 per

cent of all foreign sales of expropriated oil to indemnify the companies. He announced that the government had completed an inventory and evaluation of the oil properties which would be used as the basis of an offer of compensation to the companies. The companies had refused to co-operate with the government evaluation procedure. They held that Mexico was unable to pay an equitable price for the seized properties within a reasonable time even if the government wished to do so. On December 8 the government proceeded with the statutory appraisal of the oil properties, citing the 17 American companies whose properties were expropriated in 1938 and 10 additional companies to appear before the Federal District Court for the appointment of expert appraisers.

Land Distribution. President Cárdenas stressed the increasing momentum of the land distribution campaign in his speech of September 1. In the preceding twelve months the government had distributed 1317 parcels of land involving 989,304 acres among 106,829 farmers, while since the beginning of the revolutionary regime a total of 14,207 communal land distribution projects had been completed involving the distribution of 61,340,354 acres among 1,643,237 farmers. Three-fifths of the entire total was distributed during the Cárdenas regime. More large estates owned by United States citizens were among those expropriated during the year 1939.

Other Nationalistic Measures. To free Mexico from dependence upon United States and other foreign airplane manufacturers, the government in February contracted with the Canadian Car and Foundry Company, Ltd., for the establishment of an airplane factory near the capital. A movement was launched to curb the buying or holding by foreigners of real estate in the cities. It was charged that foreigners were taking advantage of a favorable exchange situation and Mexican economic difficulties to buy up extensive properties at low prices. A decree of August 19 prohibited acquisition by foreigners of land, water rights, mining concessions, etc., within 35 miles of the Mexican frontiers or coasts. To acquire similar property in the rest of the country, the foreign purchaser was required to renounce any appeal to his own government for protection of his rights. A campaign for repatriation of 1,400,000 Mexicans from the United States was inaugurated.

Despite growing public dissatisfaction with the results, the government continued to support the labor unions in their operation of the National Railways and in their continually increasing demands upon foreign-owned mining, power, and other enterprises. A series of wrecks on the National Railways, clogging of transport facilities at Veracruz and other ports, the growing financial difficulties of the system, and the inability of the unions to maintain discipline and efficiency among the railway workers provoked vigorous criticism from the Mexican press. A committee of workers joined in the widespread demand calling for the restoration of government operation of the railways.

Labor difficulties and restrictions imposed by the government, coupled with depressed economic conditions, led to further retrenchment or withdrawal of United States and other foreign business enterprises operating in Mexico. To check this trend Congress enacted legislation, effective

Jan. 1, 1940, guaranteeing capital and minimum interest on all sums invested in specified industries.

Economic Situation. President Cárdenas in his message of September 1 reported "recovery in almost all branches of the national economy" from the monetary panic and flight of capital of 1937-38. However, the independent newspaper *El Universal* on July 2 declared:

Mexico is experiencing a period of complete depression—our money has been devaluated; industrial progress is blocked by continuous labor conflicts, by ever increasing taxation and by the difficulties encountered in our railroad system; there is a lack of consumption; crop scarcity has made it necessary to import articles of prime necessity; the cost of living is very high; and, finally, innumerable indications and tangible facts, of which the public is well aware, . . . show that Mexico is passing through a severe economic crisis.

In an effort to check the depreciation of the peso and restore the government's credit, the Bank of Mexico re-entered the exchange market on Jan. 2, 1939, fixing the new rate of 4.99 pesos to the dollar. The average free rate was 3.50 pesos to the dollar in 1937 and 4.52 in 1938. The reduction of the price paid by the U.S. Government for foreign silver in July led to further depreciation, the average rate being 5.97 pesos to the dollar in August. Because of anticipated higher prices for Mexican raw materials, the peso strengthened after the outbreak of the European war, reaching a low of 4.75 to the dollar. With the exception of copper, mineral prices failed to show the expected increases and the government was forced to reduce the valuations set on minerals for export tax purposes. On November 23 the 4 per cent tax on all capital leaving the country, imposed in 1936, was repealed in order to aid the government in pegging the peso at about five to the dollar.

Political Developments. The Presidential campaign got under way early in 1939, Cárdenas having announced on Feb. 20, 1938, that he would not be a candidate for re-election. On Jan. 17, 1939, three leading members of the government resigned to seek the nomination from the dominant Party of the Mexican Revolution (PRM)—Gen. Francisco Mújica, Secretary of Communications and Public Works; Brig. Gen. Manuel Avila Camacho, Secretary of National Defense; and Gen. Rafael Sanchez Tapia, commander of the Mexico City military zone. On February 22 General Camacho won the endorsement of Vicente Lombardo Toledano's radical Mexican Confederation of Labor (CTM). The peasants, ranking next to the CTM in influence within the government party, and the army endorsed Camacho's candidacy soon afterwards. On July 14 General Mújica, the most radical aspirant for the nomination, withdrew his candidacy with the result that General Camacho was nominated unanimously by the national convention of the PRM in Mexico City on November 3.

The convention approved by a large majority a platform calling for complete nationalization of the Mexican oil industry, woman suffrage, institution of compulsory military service, and inauguration of a second Six-Year Plan of social, political, and economic rehabilitation. The platform was termed relatively conservative. The preamble called for co-operation of all classes in developing Mexico's national wealth "with due respect to the incentives of private benefit." The rights of labor were guaranteed, in such a way "that private industry will not find in them any

hampering or hostility." "Gradual reparation of social injustices" was called for.

Late in January four leaders of the chief opposition party, the Democratic Constitutional Front, were arrested for publicly criticizing President Cárdenas and his policies. They were released soon afterwards and thereafter the government permitted a large measure of freedom to opposition elements in organizing their campaigns. On March 7 the conservative Gen. Joaquín Amaro entered the Presidential race with a strong attack on the Cárdenas labor, social, and expropriation policies. He was widely attacked as the candidate and agent of the exiled ex-President, Gen. Plutarco Calles.

While President Cárdenas was absent from the capital during June and July on a tour of the Northern and Western States, opposition elements made considerable headway in organizing a strong anti-government front. Thirteen opposition parties and groups were united in the National Federation of Independent Parties. The Federation and many other groups endorsed the candidacy of Gen. Juan Andreu Almazán, considered the most able Mexican military leader and a moderate in politics.

He advocated friendly relations with the United States, encouragement to foreign capital, giving small landowners individual rather than communal titles to their land, organization of farmers in co-operatives, the curbing of labor "racketeers," prohibition of union intervention in religious or political issues, restoration of religious education and freedom of worship, immigration of selected European races, and in general efforts to raise the standard of living through the co-operative efforts of employers and workers. A great throng cheered him upon his arrival in Mexico City August 27 from his home city of Monterrey to organize his campaign.

Dissensions within the various groups comprising the government party split the forces supporting General Camacho and enhanced General Almazán's chances of success. Luis I. Rodríguez resigned as President of the PRM on May 28 following criticism of his leadership and was replaced on June 19 by Gen. Heriberto Jara, a revolutionary veteran. His efforts to promote unity within the party failed. In August a group of Senators who had previously supported the candidacy of General Mújica switched to General Almazán. At the same time Cárdenas shifted prominent members of the army command.

A great May Day parade held in Mexico City by some 70,000 members of the CTM militia, organized by Lombardo Toledano and drilled by army officers during the preceding two years, indicated that the radical workers were ready to play an influential part in defending the Cárdenas policies against reaction. However friction within the confederation caused the defection of some 20,000 members at its congress held in Puebla late in July. Causes of this dissension included Lombardo Toledano's action in incorporating numerous Spanish Republican refugees in the CTM, where they competed with native Mexicans for jobs. The Soviet-German rapprochement in August and September split the confederation into pro-Stalin and anti-Stalin factions. Lombardo Toledano, who was considered pro-Stalin, lost much of his influence. Many CTM members went over to the more conservative labor federation (CROM) led by Luis Morones, who supported General Almazán.

Two highly controversial laws approved by Congress at the end of December added to the bitterness of the Presidential campaign. One, amending Article 23 of the Constitution, provided for more socialized education and prohibited religious instruction in any school. The other authorized labor unions to participate in politics.

The Spanish Refugees. After General Franco's final victory in the civil war in Spain (q.v.), President Cárdenas threw open Mexico's doors to more than 5000 Republican refugees, who arrived during the summer, mainly from concentration camps in France. It was reported that as many as 300,000 Spanish refugees sought to enter Mexico. At first the government talked of admitting 40,000, but violent protests from both opposition elements and some of the government's supporters caused a progressive reduction of this estimate. The Rightist groups bitterly attacked Cárdenas and Lombardo Toledano on the ground that they were importing Spanish Loyalist war veterans to fight the government's political battles.

Ten thousand Mexican laborers gave a shipload of Spanish refugees a warm welcome when they arrived at Veracruz on June 13, but friction soon developed between the newcomers and some of the labor unions, which balked at permitting them to work. The lot of the Spanish refugees would have been much worse had it not been for the fact that part of the Loyalist Government's gold reserves, valued at 1,800,000,000 francs, were sent to Mexico in March. By agreement between the Mexican Government and the former Spanish Republican Government in Paris, it was agreed July 28 to use 300,000,000 pesos of this fund to organize a bank for the benefit of Spanish refugee settlement in Mexico.

A project for settling some 1500 refugee families from Czecho-Slovakia, Poland, Germany, and Austria was announced by the Governor of Tabasco on November 16. Many Jewish refugees had been entering the country for some time. Their coming served to fan the anti-Semitic and anti-radical campaign that had been promoted by the Mexican Gold Shirts and other pro-Fascist or conservative groups.

Growth of Disorders. The uprising led by Gen. Saturnino Cedillo in 1938 (see 1938 YEAR BOOK, p. 455) was terminated with the death of Cedillo in a clash with Federal troops near Matehuala, State of San Luis Potosí, on January 11. But other disorders spread with the development of political tension. There were repeated clashes between peasants favoring and opposing the communal farm (*ejido*) system. A minor revolt broke out in the State of Guanajuato in July. The government undertook to disarm the population in centres where trouble was expected during the electoral campaign, particularly in the States of Veracruz and Oaxaca. The dissensions within the labor unions caused an increase in factional armed clashes.

Foreign Affairs. United States. The oil expropriation issue and other related controversies placed a severe strain on Mexican-United States relations (see 1938 YEAR BOOK, p. 456). As noted above, the State Department at Washington sought to promote a compromise settlement of the oil controversy. When this failed, it attempted to keep the negotiations open.

The compromise agreement of Nov. 12, 1938, for indemnification of Americans whose lands in Mexico were expropriated removed this issue

from the field of controversy in 1939. The first payment of \$1,000,000 by the Mexican Government for settlement of these claims was made on May 31. Mexico also continued payment of \$500,000 annually on account of claims for damages to American properties during the Mexican revolutionary disorders.

There were also new irritations to American-Mexican relations. The Mexico City correspondent of the *New York Times* was summarily expelled from the country on January 16, apparently because the government was not pleased with his news dispatches concerning the oil expropriation and other matters. Pressure was exerted on other American correspondents to give the official viewpoint in dispatches on Mexican affairs. There were a number of cases of official harassment of American residents in Mexico. On June 8 the American school in Mexico City was stoned by a mob. Later Mexican leaders said that the mob had been incited to the attack by Fascist propaganda to the effect that the plane in which the Mexican flier Francisco Sarabia crashed to his death near Washington on June 7 had been deliberately damaged by Americans.

Inter-American Relations. The Mexican Government sought support for its expropriation policy from Leftist regimes in other Latin American countries. An unsuccessful effort to establish a Cuban-Mexican "axis" against the United States was made during the visit of Cuba's "strong man," Chief of Staff Fulgencio Batista, to Mexico in February (see CUBA under *History*). In January Mexico and Bolivia, which likewise had expropriated American oil properties, agreed to raise their Ministers in La Paz and Mexico City, respectively, to the rank of Ambassadors. There was little trade or other intercourse between the two countries. Mexican delegations at the various inter-American conferences held during the year were active in pressing the Cárdenas Leftist policies and seeking outside support for them. See PAN AMERICAN UNION; PAN AMERICANISM.

On the other hand, the Cárdenas Government followed the example of the United States in refusing to recognize the German annexation of Bohemia and Moravia or the division of Poland between Germany and Russia. Neutrality policies adopted with respect to the European conflict were similar to those of the United States. On July 22 the government newspaper *Nacional* advanced Mexico's claim to a portion of British Honduras in connection with Guatemalan claims to that territory (see GUATEMALA under *History*). British-Mexican diplomatic relations had been suspended in 1938.

Germany and Mexico. Germany continued to make political and economic headway in Mexico during the first three quarters of 1939 as a result of Mexican friction with the United States and Britain. New and larger deals for the barter of Mexican oil for German manufactures were arranged. At the outbreak of the European war, Germany owed Mexico for some \$6,000,000 worth of oil. On September 14 the German Minister in Mexico City proposed that a number of German ships that sought refuge in Mexican harbors be held as security for the Reich's oil debt. The Mexican Government did not intern the German vessels, but was reported considering their confiscation if the oil debt was not paid.

Late in February eight persons, most of them Germans, were arrested by Mexican police on

suspicion of Nazi espionage activities. Two of them—Baron Hans Heinrich von Holleufer, an agent in Mexican-German barter deals, and a Polish Jew—were expelled from Mexico by a Presidential decree on March 1. According to Mexican press reports, the investigation revealed an espionage ring operating in Mexico, British Honduras, and the United States and directed mainly against the United States.

After the war in Europe began, there were repeated charges that German vessels in Mexican ports were refueling and supplying German submarines. The Mexican artist, Diego Rivera, stated in November that agents of Stalin and Hitler were collaborating in Mexico in activities directed against the Allies and the United States, and that they had the co-operation of the Mexican Communist party.

Relations with Spain. The Fascist movement in Mexico received a strong stimulus from the victory of General Franco in the Spanish civil war. The Mexican branch of the Spanish Fascist movement (*Falange Española*) redoubled its activities with the aid of funds from Franco sympathizers in Mexico, which were diverted into Mexican politics once Franco's triumph in Spain was assured. The Cárdenas Government watched with concern evidences of collaboration among the Spanish Fascists and German, Italian, and Japanese agents in support of anti-liberal opposition groups. In April, after Spanish Fascists had held meetings and anti-labor demonstrations in Mexico City and Veracruz, the government warned them that foreign organizations of a political and military character were unwelcome. Shortly afterward three leaders of the *Falange Española* were expelled from Mexico and the organization announced its dissolution. Reports later in the year indicated that the Spanish Fascists were continuing their activities underground in collaboration with anti-government elements, including some members of the Mexican Roman Catholic clergy. Nevertheless diplomatic relations between the Cárdenas and Franco governments were restored to normal on July 24, with the Portuguese chargé d'affaires in Mexico City taking charge of the Spanish Embassy on behalf of the Franco regime.

See BRIDGES.

MIAMI UNIVERSITY. A coeducational State-supported institution at Oxford, O., founded in 1809. The enrollment for the autumn of 1939 was 3231, as follows: Liberal arts, 1169; education, 935; business administration, 951; fine arts, 136; and graduates, 40. The enrollment in the summer session: 1st term, 793; 2d term, 297. The faculty numbered 221. The income from the State of Ohio, fees, gifts, and income on investments for 1937-38 was \$97,174. There were 152,025 bound volumes in the library. President, Alfred H. Upham, Ph.D.

MICHIGAN. Area and Population. Area, 57,980 square miles, exclusive of the State's part of the Great Lakes; included (1930) other water, 500 square miles. Population: Apr. 1, 1930 (census), 4,842,325; July 1, 1937 (Federal estimate), 4,830,000; 1920 (census), 3,668,412. Detroit had (1930) 1,568,662 inhabitants; Grand Rapids, 168,592; Flint, 156,492; Lansing, the capital, 78,397.

Agriculture. Michigan's harvest of 1939 covered 7,425,000 acres. Corn, on 1,574,000 acres, made 58,238,000 bu. (estimated farm value, \$31,-449,000); tame hay, on 2,640,000 acres, 3,415,000 tons (\$23,905,000); potatoes, 250,000 acres, 24,-

250,000 bu. (\$14,550,000); wheat, 739,000 acres, 15,424,000 bu. (\$11,568,000); oats, 1,139,000 acres, 42,712,000 bu. (\$13,668,000); dry beans, 452,000 acres, 4,520,000 100-lb. bags (\$11,740,000); apples for market, 7,800,000 bu. (\$4,290,000); peaches, 2,760,000 bu. (\$1,932,000). Sugar beets, on 120,000 acres, gave 1,024,000 tons; the value of the previous year's crop (nearly of the same size) was \$6,110,000.

Manufacturing. Figures on the manufacturing activity of Michigan in 1937, appearing in the U.S. Census of Manufactures published in 1939, were as follows (figures for 1935 in parentheses): manufacturing establishments numbered 5614 (5544); they employed 660,676 wage-earners (531,658); their year's wages were \$986,840,523; the output of manufactured goods attained \$5,296,100,960 (\$3,986,178,348); to which sum the processes of manufacture contributed \$2,091,663,311 (\$1,558,119,450). As the product of one line of manufacture sometimes went into another line as material the figure for the value of manufactured products included duplications. More than one in every eight inhabitants were at work during 1937 for factory wages; these averaged nearly \$1500 a year to the worker; they came almost to \$204 per capita of the population.

The predominant industry was the production of motor-driven vehicles; it accounted for one-half or more of the total manufactured output; not all of the output of motor-driven vehicles was due to automobile-making establishments; on the contrary, the total for that output was largely a duplication of that for the production of parts and accessories of such vehicles; and the total for these, in turn, duplicated to some extent those for machinery, tools, steel-works' output and other lines.

The establishments making motor-driven vehicles in 1937 numbered 27; they employed 121,312 wage-earners, who received \$203,344,147; they used \$1,162,423,441 in materials and other necessities, and produced \$1,613,225,661 in value of output; to this total their own manufacturing processes contributed \$450,802,220. The separately classified makers of bodies and parts for such vehicles employed 176,165 wage earners, paid them \$285,146,797, used \$826,224,863 of materials and other necessities, attained an output of \$1,313,376,621, and contributed to this sum, by their own processes of manufacture, \$487,152,358. The two manufacturing groups together employed 45 per cent of Michigan's manufacturing wage-earners and paid almost half the factory wages dispensed in the State.

Third of the manufacturing groups in point of magnitude, steel-works, and rolling mills, produced \$130,888,132 in goods, of which part eventually found its way into automobiles. Foundry products amounted to \$114,463,371. Paper, manufactured on a large scale, showed an output of \$92,418,197.

Furniture, one of the long established manufactures dating from the days of abundant lumber near at hand, accounted for \$57,889,188 of the manufacturing total. Chemicals attained a production of \$60,035,644; drugs and medicines, of \$44,975,552; miscellaneous machinery, \$53,271,042; machine-shop products, \$67,428,487; machine-tool accessories and machinists' instruments of precision, \$67,989,622.

The Detroit industrial area, comprising Oakland and Wayne counties, employed in 1937, 406,882, or five-eighths of the State's total; paid

in manufacturing wages \$648,515,254, nearly two-thirds of the figure for all Michigan and produced manufactures to the total of \$3,409,350,809, to which its manufacturing processes contributed \$1,304,952,550. The manufactured products of Battle Creek totaled \$82,741,772; those of Saginaw, \$76,460,561; Kalamazoo, \$70,586,825; Grand Rapids, \$102,567,748.

Mineral Production. The yearly total value of Michigan's production of native minerals was \$119,167,573 for 1937. Iron ore covered about one-third of the amount and petroleum over one-sixth; copper, cement, salt, and natural gas were substantial components. Iron mines' shipments sank to some 4,092,902 gross tons of ore, for 1938, which scarcely came to 30 per cent of the 12,626,935 tons shipped in 1937; the totals by value were \$13,139,823 (1938) and \$41,136,202 (1937). The production of petroleum extended the gain achieved in 1937; the yearly total rose to some 19,211,000 barrels for 1938, from 16,628,000 (value, \$21,950,000) for 1937. Though falling prices for the product somewhat reduced drilling in 1938 several new fields yielded petroleum; notably, the Freeman-Redding field, in Clare County. Cement shipped by producers, 7,192,511 barrels for 1938, fell somewhat below the 7,831,880 barrels shipped in 1937; the totals by value were \$8,767,959 (1938) and \$9,836,999 (1937). Copper mines produced ore containing, for 1938, 93,486,000 pounds of copper, as against 94,928,000 pounds, by value \$11,486,288, for 1937. Salt sold or used by producers diminished to 2,078,612 short tons for 1938, from 2,476,406 for 1937; by value, to \$6,151,154 from \$6,506,120. Natural gas though not produced in sufficient quantity to supply the yearly consumption in Michigan, yielded (1937) 9080 million cu. ft., of which the value was \$871,000 at the wells but \$5,640,000 at the consumer's end of the pipe lines; the production of natural gas was reported as 9233 million cu. ft. for 1938.

Apart from the total production of iron ore and other native minerals as totaled above, Michigan had important industries for handling minerals from outside. Though relatively little coal was mined in the State, coke was produced to the total of 1,751,781 net tons for 1938, as against 2,283,518 (value, \$13,816,401) for 1937. Pig iron was made, not necessarily from Michigan ore, on a substantial scale; blast furnaces' shipments of pig iron fell to 558,782 gross tons for 1938, from 886,602 for 1937; by value, to \$9,806,994, from \$15,064,083.

Education. Inhabitants of school age in Michigan (from 5 to 19 years) were reported as numbering 1,399,769 on May 31, 1938. For the academic year 1937-38 (the latest for which the data that follow had been issued) enrollments of pupils in all public schools totaled 959,827; this comprised 548,194 in the elementary group, 386,360 in high schools, and 25,273 otherwise enrolled. The year's expenditures for public-school education totaled \$98,415,803. Of this, the greater part went to salaries paid to 32,566 teachers at the average of \$1525.04 a year.

Legislation. The regular session of the 60th Legislature assembled January 4, adjourned provisionally May 26, resumed on June 29 at the Governor's demand, although he had disposed of the bills sent to him, and put through measures designed to bring the budget for the next two years at least formally into balance. The problem of lawmaking bristled with difficulties raised by two changes of governors within three months, a

change of partisan control from Democratic to Republican, a legacy of floating debt left by the Murphy administration, and Republican campaign promises to appropriate \$45,000,000 for public schools and to balance the budget.

State civil service, immune to placeholders' loss of positions by change in partisan supremacy, had been created by a special session in 1937, under the Murphy administration. The session of 1939 leaned to the view that the act of 1937 had simply provided permanent tenure for great numbers of Democratic "henchmen" and created lists of Democratic heirs to the jobs. Accordingly, after much dispute, the session amended the system in divers ways, doing away with the old priority lists and throwing many positions open to new appointment. Natural to a sweeping change of partisan control, also, were acts reorganizing a number of the State's departments. These acts did away with the Emergency Relief Commission and the Public Utilities Commission, created instead a five-man State Welfare Commission and a Michigan Public Service Commission, and put an end to the Legislative Council created in 1933.

In addition to a \$2,728,000 deficiency appropriation designed to meet some of the more pressing charges already standing against State institutions and services, the session appropriated a reported total of \$207,401,779 for expenditure in the next two years, inclusive of a sharply reduced annual total of State aid to schools. The estimated revenues of the State for the same period exceeded appropriations by \$140,006. In order to elevate revenues sufficiently to exceed expenses, the lawgivers added to the State's taxes a specific tax on intangible property at 6 per cent on the income thereof or, in case of an unproductive intangible, at one-tenth of 1 per cent of face value; the tax on productive intangibles might not exceed three-tenths of 1 per cent of face value. A sales tax on electric light and power from municipal sources was also imposed. The revenue from the new taxes was to approximate \$4,000,000 a year.

A new act on labor relations put mild although definite restrictions on strikers, in the endeavor to preclude such happenings as the strikers' seizure and forcible holding of employers' premises, witnessed in 1937; interference with employees entering or leaving such premises in pursuance of duty was forbidden, and a five days' wait, before a strike, was required, to allow time for a newly created State Labor Relations Board to mediate between the affected parties. Another act affecting labor, an amendment to the system of unemployment-compensation, increased the spread in the rate of the tax on employers, as between the ones who threw few out of work and those dropping many from the payroll; other amendments reduced the wait preliminary to the unemployed person's receipt of his first payment to two weeks, from three, and excluded from payment the worker who had left his employment voluntarily.

Seven commissions, created in the Murphy administration, for such purposes as the study of taxes and the reform of State government, met their deaths by the failure of the Legislature to make further appropriation for them. A method for regulating the price of milk was provided, whereby a commission of seven members, authorized to license handlers of milk, was to set prices, which handlers must observe lest licenses be withdrawn. Amendments to the traffic code raised the allowable rate of travel on city streets to 25 miles an hour and gave stricter ap-

plication to the law on drunken drivers. The Lieutenant-Governor acquired \$2500 a year, additional his \$3 per diem, by an act making him a member, *ex officio*, of the Administrative Board, at that remuneration. Detroit was authorized to extend water mains and sewers to reach other municipalities in Wayne County. Outlying lines of the Detroit Street Railway were put under the jurisdiction of the Public Utilities Commission. Education on the subject of temperance was required as part of the work of the Department of Public Instruction; but without accompanying appropriation for the cost of the service. Public-school busses were allowed to transport pupils of private and of parochial schools, under stated conditions.

Political and Other Events. Frank D. Fitzgerald (q.v.), who had preceded Murphy as Governor, succeeded him January 1, bringing the State back under the rule of the Republicans. He died about ten weeks later, March 16, of a brief illness, before he had had time to deal adequately with the many important problems of the State. He was at the time in the midst of an effort to handle the move of the Legislature's Republican majority to do away, as a matter of reprisal, with the system of civil service created by the previous Democratic Legislature—a system suspected by some Republicans of embodying a scheme to lock Democratic employees into their State positions. He was also, at the moment of his death, confronted with a demand that he use his powers to send the State police into the cities and suppress gambling establishments, over the heads of the local authorities.

Luren D. Dickinson, Lieutenant-Governor, who succeeded to the Governorship, was a countryman and veteran Republican office-holder, 80 years old, well versed in political ways and highly regarded by a great part of the rural population; he had formerly been a champion of prohibition in the State, had the mental repertory of the older generation, and did not represent himself as keenly enlisted for or against the sociological proposals of the day.

The budgetary position of the State was characterized by Aud.-Gen. V. J. Brown (April 10) as the worst in the history of Michigan. The general fund was said to be overdrawn by many millions, and the deficit on the accounts of the closing biennium was expected to reach \$30,000,000 by the close of June. This state of affairs was attributed to overexpenditure consequent upon the acts of the previous Legislature and the administration of Governor Murphy; the deficit was regarded as inherited from that time.

The State had unusual difficulty early in 1939, under these conditions, in meeting some of the most pressing charges upon it. The acting Director of Emergency Relief stated (March 15) that 77,327 cases were on the rolls for the receipt of poor-aid and that every county's relief commission seemed to have exhausted its funds for these people's support; this made it a pressing matter for the State to find several million dollars to help sustain these dependents until June 30. Retrenchment was applied in many directions under the terms of an economy act designed to curtail some of the State's operations and thus limit the tardiness in the payment of the State's current debts. Many of the crippled children in the University Hospital were sent home in July because of reduced allowances from the State for their care. Though new taxes were created by the Legislature

they did not give much immediate help; as late as the middle of August the checks for the State's semi-monthly payments of salary were mailed to an amount \$46,000 in excess of the money in banks for meeting such checks. The Budget Director declared, September 1, that the remaining deficit of the State's general fund totaled \$25,211,014.

The State Supreme Court ruled early in September against the much disputed ordinance of the city of Dearborn forbidding the distribution of handbills in the streets except after their approval by the city clerk with regard to the truth of the statements that they contained. The 21 remaining cases against alleged participants in lawless acts of the Black Legion (see *YEAR BOOK*, 1936, p. 454) were dismissed (May 18) from the criminal courts' dockets. Virgil F. Effinger, long sought on one of the chief indictments in this group, had remained out of reach in spite of effort to extradite him from Ohio. A Board of Milk Control, created by the Legislature in 1939, was set up; it raised the price of milk at both ends of the marketing process, so that the household consumer paid an additional cent a quart. The Emergency Appropriations Commission, a body delegated by the Legislature to grant public money in minor amounts, between sessions of the Legislature, from \$500,000 a year specially provided, made small additional allotments to a number of the State's bureaus. Provision of means for the nonpartisan election of judges, through an amendment to the State constitution, was adopted by popular vote on April 3; separate ballots were thereby required for the nomination of the judicial candidates at the primary elections, and the names admitted to be printed on these ballots had to be qualified by petition bearing signatures in specified number; candidates' names had to appear without designation of their partisan affiliations.

Affairs of Detroit. The popular vote, cast in Detroit on April 3, adopted a proposed amendment of the city charter, creating a so-called "merit system" for the municipal police service; a proposal for a fund to pension employees of the Detroit Street Railway, condemned by an actuary as unsound, was defeated. The city was troubled until late in the year by difficulty in restraining a mounting deficit. It won in the State Supreme Court (April 4) two decisions affirming its course in dealing with tardiness in the payment of taxes on property; the Court held that the amendment of 1933, allowing the city to seize and sell property for delinquency as to taxes, was valid and that the city need not pay unsatisfied State and County taxes on a piece of property in order to realize its own claim for taxes thereon. Sharing in an effort to rehabilitate the Hupp Motor Car Corporation, which had obtained a loan of \$900,000 from the RFC, the City Council voted in April to cut that company's bill for unpaid taxes to \$125,000, from \$275,000.

Disturbances of Labor. Strikes and kindred interruptions of occupation in the chief manufacturing of automobiles alternated for most of the year with strife between employees' unions or between factions of the prevailing group; thus the character of labor relations in Michigan's predominant automobile-making industry much resembled that of the two years previous. The conflict between the supporters of Homer Martin in the United Automobile Workers and his opponents had quieted in 1938; it broke out again in January, 1939. Martin's opponents in the executive board of

this group started stripping him and his subordinates of their authority; he retaliated by suspending (January 20) the 15 opponents who formed the majority of the board. They remained too many for him to overcome in the groups dominating the employees in most of the shops where the industry went on. He endeavored in February to lay the way for alliance with the A.F.L., whose trade unions still sought to maintain their place in the manufacturing, against the industrial unions of the C.I.O. A call on the employees of the Plymouth works of the Chrysler Corporation to throw off their C.I.O. buttons (February 22) caused a riot that temporarily closed the shop and demonstrated Martin's inability to lead a general exodus. Thereafter the U.A.W. supplied a name to two rival organizations, of which Martin headed one, affiliated with the A.F.L. and holding authority over a somewhat uncertain number of workers in the industry. In May and June these two struggled for supremacy in a series of strikes, among shops of General Motors and Chrysler companies. Martin's U.A.W.A. started a strike in the General Motors' works at Flint and Saginaw early in June, but the new State law on strikes had gone into effect, and he found that the police were arresting his pickets as prescribed therein, for interfering with non-strikers going about their work. General Motors' management, using a right newly granted to the employer, appealed to the NLRB, July 1, to assume jurisdiction (impliedly, to hold elections in order to determine with which fragment of the old union the company should deal), in the subsequent strike started by the U.A.W.A. wing affiliated with the C.I.O. The NLRB did not order an election at the time, but James Dewey, a Federal mediator, entered the proceedings and brought about an agreement (August 5) between the company and the union's wing affiliated with the C.I.O. This agreement left the ownership of the pre-existing contract (claimed by the rival organization) for settlement by other authority, but was thought to give the labor group making the new agreement a strong hold on the affiliation of the workers.

There followed a protracted slowing and, subsequently, interruption of work in the Chrysler factories. As the output of one factory supplied the work at another, the intentional interruption at one point in the chain of production tended to stop movement all along the line. The company complained that it had encountered slowdowns from the start of production on its 1940-model automobiles, August 15. The union presented, October 11, a demand for a unionized shop, in which all employees must within a given time after receiving their positions, enter the union. Federal conciliators entered the negotiations, which lingered over many weeks and kept 50,000 idle and payless; the State's Unemployment Compensation Commission disallowed these people payment from its fund, holding them excluded by a specification in the State law, excluding those idle because of a labor dispute.

The C.I.O.'s faction of the U.A.W. finally called a strike, November 25, against the main Dodge factory of the Chrysler organization. The latter then accepted terms, under which wages rose 3 cents an hour, seizures of property and slowdowns were barred, and grievances were left to a board of appeals, having representatives of either side among its members. The employees ratified the resulting contract by vote November 29.

The Utility Workers Organizing Committee, connected with the C.I.O., started September 22, a strike against the Consumers Power Company, furnishing electric current to consumers in an area, mainly in southern Michigan, containing about 2,000,000 inhabitants. There occurred no general interruption of service.

Elections. Detroit, in its municipal election, November 7, elected Edward J. Jeffries to be mayor, giving him nearly two votes to every one for his opponent, the actual mayor, Richard W. Reading. The campaign was formally non-partisan, but Reading, who had won at the last election as an opponent of the social practices of the C.I.O., was thought to have strengthened that group by his defeat.

Officers. Michigan's chief officers, serving in 1939, were: Governor, Frank D. Fitzgerald (Rep., died in office March 16); Lieutenant-Governor and (succeeding Fitzgerald) Governor, Luren D. Dickinson (Rep.); Secretary of State, Harry F. Kelly; Attorney-General, Thomas Read; Treasurer, Miller Duncel; Auditor-General, Vernon J. Brown; Superintendent of Public Instruction, Eugene B. Elliott.

MICHIGAN, LAKE. See WATERWORKS AND WATER PURIFICATION.

MICHIGAN, UNIVERSITY OF. A State institution for the higher education of men and women at Ann Arbor, founded in 1817. The resident enrollment in the fall of 1939 was 12,098. The enrollment for the summer session of 1939 was 5594. These figures do not include students taking courses for credit in the Extension Service. The total enrollment of the regular session, the summer session, and extension service in 1938-39 was 19,591. There were 773 members of the faculties in 1939-40, not including assistants or teaching fellows. The income of the University in 1938-39, exclusive of gifts, was \$9,683,937, and the value of gifts received during 1938-39, exclusive of grants from the Public Works Administration, was \$645,944. Endowment funds amounted to \$14,356,133 on June 30, 1939, and the value of grounds, buildings, and equipment was \$53,364,689. There were 1,060,784 volumes in the libraries of the University. The most important event of the year 1938-39 was the actual construction of the buildings to the cost of which funds were contributed by the Federal Public Works Administration. These include two groups of dormitories for men composed respectively of seven and four units: Stockwell Hall, a dormitory for women; Victor C. Vaughan House, a dormitory for medical students; a home for interns at the University Hospital; an addition to the Dental Building to provide quarters especially for postgraduate and children's dentistry; a new building for the Student Health Service; and necessary additions to the heating and power plant in order adequately to care for this expansion of the physical plant. A programme for the administration of the University Residence Halls was devised during the year, the central purpose of which was to insure that students in the University residence should find cultural advantages and experience in communal living which would be an essential and highly important part of their education. Through the generosity of anonymous donors, it was possible in 1939 for the University of Michigan to plan to erect a building in Detroit which will serve as a center for the many graduate courses and extension courses given by the institution in that city. This building will adjoin another which is

to be erected by the Engineering Society of Detroit for its own purposes, and between the two buildings will be a unit with special rooms including an auditorium seating about 1000 persons which will be used by both the University and the Engineering Society. President, Alexander Grant Ruthven, Ph.D., LL.D., Sc.D.

MICROPHOTOGRAPHY. See PHOTOGRAPHY.

MIDDLEBURY COLLEGE. A coeducational, nonsectarian college at Middlebury, Vt., founded in 1800. For the autumn term of 1939, 783 students were registered as undergraduates and 16 as graduates; of these, 433 were men and 366 women. The enrollment in the special summer schools of French, Spanish, German, Italian, and English, conducted by the college, amounted to 700. There were 61 members of the faculty. The productive funds of the college in 1938-39 amounted to \$4,315,646 and the income for the year was \$401,891. Gifts to the college were \$18,604. The library contained 110,000 volumes. Construction of the James Gifford Memorial Hall for men, to house 110 students, was started in October 1939. The gift of a recitation hall by Charles A. Munroe of New York was also announced this fall. Ground for this building will be broken in the spring of 1940. President, Paul Dwight Moody, D.D.

MIDDLE CONGO. See FRENCH EQUATORIAL AFRICA.

MIDWAY ISLANDS. A group of islands in the North Pacific (28° 12' N.; 177° 22' W.), some 1200 miles to the northwest of Hawaii. Area, 28 square miles; population (1936), 118. The Naval Appropriations Bill of 1939 provided for the construction on the islands of a U.S. air and submarine base. Since 1935 the islands have been used as a station on Pan American Airways' transpacific route to Manila. They are under the jurisdiction of the U.S. Navy Department.

MILITARY PROGRESS. Trends. The year opened with all major nations attempting to solve the ever-present problem of fire and movement—striking power versus mobility, their views and opinions crystallizing from the "laboratory" results of the armed conflicts in Ethiopia, Spain, and China, and their programs accelerated by the diplomatic conflicts culminating in Munich. Dominant was the theory that to win a war a lightning stroke was necessary—a solar plexus blow paralyzing all elements of national defense in the adversary nation. According to proponents of this theory three elements were essential, viz.:

1. An overwhelming initial blow from the air.
2. A following hammer-stroke by ground troops to seize and hold essential hostile terrain.
3. An accompanying defense from counter-blows, by means of antiaircraft elements and garisons of fixed fortifications.

Such doctrines were subscribed to by the so-called dictator powers, already geared to impress the entire national effort in support of the fighting forces. The so-called democratic nations, pacifistically inclined by nature of their respective popular governments, had for a number of years neglected their military protection to a greater or lesser extent, but were straining every effort to regain the ground lost. These latter, however, were necessarily restricted to the focusing of attention primarily upon the successful parry of an initial aggressive blow, with the counter-offensive temporarily in secondary role.

All military opinion was convinced of the necessity for a basic organization which would embrace the efforts of the entire nation united economically, financially, and commercially, behind the armed forces—the theory of the "nation at war" definitely replacing that of the "nation in arms," outmoded by the first World War.

The technical military problem involved insofar as mobile ground troops were concerned was one which would embody the basic principles of war while taking advantage of the latest developments of science. Since in battle the division—made up of components of infantry, artillery, and auxiliary arms—is the basic self-contained unit of combat, the essential was to construct a division which would be able to move fast while at the same time retain striking power. Mobility could be attained in part by motorization and reduction in man-power, while striking power must be retained or increased by increasing the number of automatic weapons in the infantry component, with the further limitation that the actual man-power must not be so reduced as to endanger ability to utilize the final factor in striking power—the physical assault to occupy the objective.

The solution adopted in general was a divisional organization consisting of nine infantry battalions of approximately 1000 rifles each, supported by an artillery component of light guns, the infantry battalions being grouped in threes.

Exceptions to this triangular divisional formation at the beginning of 1939 were several. Great Britain, for instance, was changing over from a composite formation of 12 infantry battalions organized in 3 brigades (each equivalent to a U.S. infantry regiment), first to a 9-battalion, then, in part to a 6-battalion, and finally to an 8-battalion infantry component. The United States, except for 1 provisional triangular division in experimental use since 1935, retained its World War large division of 12 infantry battalions, organized in 2 brigades of 2 regiments each, supported by a 3-regiment artillery brigade. Japan, with approximately the same organization as the United States, had been experimenting in China with the use of single brigades (half-divisions) reinforced by an artillery component. Italy, with a triangular division, was also experimenting with a 2-regiment (6 battalions) infantry component.

Much of this experimentation was in fact a partial return to the idea, utilized some years ago by both Great Britain and France in "little wars," but since discarded in major campaigns, of making up the infantry-artillery team in accordance with the necessities of the moment and the exigencies of the situation. In Great Britain such forces were termed "mixed brigades" or "field forces," and in France "*groupes mobiles*." Further variations in type divisions were necessitated by geographical considerations in the various nations where, for instance, the difficulties of mountain warfare rendered it essential to group fighting men in smaller units, sacrificing striking power for mobility.

An important trend in artillery matériel not only abroad but in the United States had been toward the so-called gun-howitzer; the principle involved being search for a weapon which should combine the range of a flat-trajectory gun with the ability to search, by means of the more curved trajectory of the howitzer, terrain which might be screened by hilly ground from the flatter trajectory of the gun. A homely example would be the

Type	Weight (tons)	Crew	Max. speed M.P.H.	Combat speed	Traction	Armament	Armor thickness in inches (front only)
Creepers.....	$\frac{1}{4}$ - $\frac{1}{2}$	1	6-12	1-5	Track	1 MG.	.25-.50
Tankette ..	2-4	2	20-35	8-15	Track	1 MG. or 1 cannon	.25-.63
Light tank.....	5-9	2-4	15-45*	10-20	Track	1-3 MGs or 1 cannon and 2 MGs	.35-1.33
Medium tank.....	10-20	4-6	15-35	8-20	Track	1-2 cannon and 1-3 MGs	.50-1.4
Heavy tank.....	30-75	6-10	10-20	5-10	Track	3 cannon and 2-10 MGs	1-2
Amphibian.....	3.3-11	2-3	6-10 water 25-36 land	8-20	Propeller and track	1-3 MGs	.35-.59
Half-track armored car.....	4-8	3-4	25-30	10-15	Wheels in front; track in rear	1 cannon and 1-2 MGs	.25-.50
Light armored car....	4-8	3-4	35-60	25-40 on roads	2 or 4 wheel drive	1 cannon or 1 heavy MG and 2-3 light MGs	.20-.35

* The Russian Christie-type fast tanks are credited with speed up to 68 m.p.h.

ability of an individual to lob a baseball over a high fence that would stop a line drive. Search for a happy medium had taken the form of improvements of gun mounts to permit higher elevations, and the use of propelling charges made up of increments some of which might be removed to reduce projectile range.

Developments in the automotive industry had made mechanization—utilization of fast units of armored combat vehicles—a fact. The armored vehicle—tank in the infantry, combat car in the cavalry—moving on cross-country treads, and armed with light cannon and machine guns, was a self-contained fighting unit, more mobile than its World War precursor, the original tank.

Modern armored vehicles had attained the general characteristics given in table above.

Use of these modern vehicles had in general gravitated into two major functions:

(A) Tanks utilized with infantry as either (1) accompanying, or (2) leading; that is, moving in assault with the infantry waves to break down hostile strong points, or used to crash openings in the hostile front through which the assaulting infantry and more tanks could follow.

(B) Tanks and armored cars utilized in mobile divisions for raids, advance or rear guard actions or pursuit; in other words, cavalry missions. Units organized for this purpose were known as mechanized cavalry or armored troops.

This mechanization had in turn brought about the development of special weapons to combat it—primarily artillery, since the tank is most vulnerable to artillery fire. Other anti-tank weapons were tank-traps—steep-sided holes like elephant traps; land mines, and obstacles ranging from improvised obstructions such as felled trees to permanent concrete and metal obstructions sown deep in areas through which tanks must pass.

The following table gives the approximate armor-penetration characteristics of various weapons used against tanks, based upon 90 degree angle of incidence:—

Weapon	Caliber (inches)	Rate of fire in combat, rds. per minute	Armor penetration at 100 yds. distance
Rifle.....	.30	10	.35 inch.
Automatic Rifle.....	.30	40	.35 "
Light MG.....	.30	250	.35 "
Heavy MG.....	.50	100-150	.80 "
20 mm anti-tank rifle.....	.79	10	1.25 "
37 mm cannon*	1.45	10-20	1.30 "
47 mm cannon*	1.85	10-20	2.00 "
75 mm cannon.....	3.00	6	†

* Both these calibers are specifically anti-tank artillery. † Direct hit probably fatal to any tank.

The menace of the air arm, which had proven in the Spanish civil war that it could take its place on the battlefield as part of the combat-team, in addition to its long-range bombardment abilities, had brought about tremendous developments in anti-aircraft weapons, and in defense systems co-ordinated by means of warning intelligence nets to notify headquarters of the approach of hostile aircraft, and combining balloon barrages, anti-aircraft artillery, both fixed and mobile, and the use of fighter-type airplanes to combat bombers in the air.

Modern anti-aircraft artillery has the following general characteristics:—

Weapon	Caliber (inches)	Effective vertical range	Average rate of fire per minute
Mobile.....	2.7-3.2	20,000 ft.	10-30 rounds
Fixed.....	3 to 5	30,000 ft.	10-15 rounds

Fire control is by director, with the data computed—provided the observer can track the target in his range-finder—and set off on the gun by electro-mechanical remote control. Without director control and semi-automatic loading, anti-aircraft fire is reduced tremendously in volume and effect. Guns are fired in batteries of at least four; the trend is also towards multiple-barreled guns, particularly on naval vessels where space is valuable. This is for the purpose of assuring coverage of a certain air space by a group of bursting shells, rather than by attempting to destroy the target with a direct hit. Modern anti-aircraft shell are of the high-explosive type, detonating by means of a mechanical fuze and showering steel fragments. The old artillery adage—"one gun, no gun"—has definite bearing on this problem.

No new developments in chemical warfare had been definitely proven.

Operations. Hostilities during 1939 in Europe on land (See EUROPEAN WAR.) break down into three broad phases:—

1. Invasion of Poland by Germany.
2. Invasion of Finland by Russia.
3. Defensive measures and feints along the Franco-German frontier.

The first of these followed definitely the pattern noted above: overwhelming initial blow from the air, paralyzing Polish air power, co-ordinated with hammer-strokes by fast-moving ground troops—with armored elements leading—over-riding hostile troops and piercing geographical barriers to gain possession of vital terrain. Mopping up of the demoralized Polish troops followed more slowly. Air and ground troops were used in close

co-operation. Defense from counter-blows on the western front was assured by the Westwall fortifications and antiaircraft elements.

The second operation, following the same pattern in theory, is still nebulous of results. Without further knowledge it would be impossible to make a definite critical analysis. The surmise might be made however, that lack of co-ordination and of tactical and strategical ability on the Soviet side, added to the Finnish geographical barriers to invasion, primarily delayed any decisive result.

The third operation—between two defensive zones of great strength—has so far resulted in the stalemate visualized by soldiers at the opening of the war.

It should be noted that so far unrestricted air warfare—the totalitarian warfare upon civic centers advocated by the late General Douhet of the Italian Army, and after him dubbed the "Douhet Theory," has been used in but two of the above operations—the Polish and Finnish invasions. In both cases the attacker had overwhelmingly superior air power, capable—at least in theory—of attaining and maintaining that ephemeral thing—air superiority, precluding possibility of defensive retaliatory raids into the aggressor terrain.

At the close of 1939 the Powers of the world line up in military strength as follows:

LAND FORCES, PRINCIPAL WORLD POWERS

[Estimates based on tabulations in "World in Arms," as of Aug. 1, 1939, amplified by later developments]

Nation	Under arms, Dec. 31, 1939	Trained re- serves mobi- lizing or mo- bilizable	Total
British Empire.....	1,027,000*	610,000	1,637,000
Great Britain.....	500,000*	450,000	950,000
Canada.....	100,000*	50,000	150,000
Ireland.....	37,000*	..	37,000
Australia and New Zealand.....	100,000*	.....	100,000
South Africa.....	50,000*	.....	50,000
India.....	240,000*	110,000	350,000
Germany.....	1,500,000*	5,350,000	6,850,000
France.....	1,300,000*	3,960,000	5,260,000
Russia [†]	1,800,000*	5,350,000	7,150,000
Finland.....	150,000*	150,000	300,000
Italy.....	900,000*	6,515,000	7,415,000
Japan.....	1,200,000*	5,071,000	6,271,000
Belgium.....	170,000*	672,000	842,000
Bulgaria.....	135,000*	87,000	120,000
Denmark.....	70,000*	30,000	100,000
Norway.....	60,000*	75,000	135,000
Sweden [‡]	100,000*	525,000	625,000
Greece.....	31,000*	562,000	595,000
Hungary.....	50,000*	650,000	700,000
Yugoslavia.....	150,000*	1,690,000	1,840,000
Netherlands.....	90,000*	570,000	660,000
Spain.....	200,000*	400,000	600,000
Portugal.....	20,000*	495,000	515,000
Rumania.....	300,000*	1,500,000	1,800,000
Switzerland.....	100,000*	480,000	580,000
Turkey.....	160,000*	550,000	710,000
Argentina.....	48,100*	283,900	332,000
Brazil.....	60,000*	310,600	370,600
Chile.....	37,000*	216,000	253,000
United States*.....	229,000	240,000	469,000

* Estimates only. [†] Russia may be expected to retain 50% of her mobilized strength east of the Urals for future Asiatic eventualities. Mobilization in this nation is relatively slow; partial mobilization was probably in effect prior to outbreak of Russo-Finnish hostilities. [‡] Normal peace-time Regular effectives. [§] Coast defense forces are under naval control. * See "United States" below.

United States. In January, 1939, President Roosevelt addressed Congress upon the necessity of placing the United States Army in a position of preparedness for any eventuality. April 25 the Congress passed the Army Appropriation Bill of \$549,000,000—largest peace-time War Department

allotment in the national history, the President signing it the next day. \$340,000,000 of this sum was for Air Corps expansion, and of the remainder approximately \$120,000,000 was allocated for critical items of armament essential for equipping and modernizing the Army—both Regular and National Guard.

At that time the Regular Army consisted of 165,000 enlisted men and approximately 14,000 officers; the National Guard had a strength of 190,000—figures limited by Congressional appropriations for pay and subsistence, although the National Defense Act of 1920 had authorized a Regular Army strength of 280,000 enlisted and 18,000 officers, and a National Guard minimum strength of 424,000. These last noted figures had, of course, never been appropriated for, although authorized. There existed also a lately authorized Regular enlisted reserve force of approximately 20,000 men, as a reservoir for filling existing units to war strength in emergency; and an Officers' Reserve Corps of approximately 104,000 active reservists, as a framework for a National Army if authorized.

The Regular Army consisted of six divisions—five of them incomplete—and six additional brigades of infantry; one cavalry division, one mechanized cavalry (armored) brigade, five mobile antiaircraft regiments, coast artillery elements both fixed and mobile, manning harbor defenses; an air corps, and a service command comprising technical and supply troops and personnel on duty at schools, depots, etc. All these units were scattered throughout the continental United States and also garrisoning our overseas possessions—Philippines, Hawaii, Alaska, Panama Canal Zone, and Puerto Rico.

The National Guard consisted of eighteen incomplete divisions of infantry, four incomplete cavalry divisions, ten mobile antiaircraft regiments, harbor defense coast artillery and technical and supply elements, and an air corps of observation aviation, all—with exception of two infantry regiments each in Hawaii and Puerto Rico—in the continental United States.

In the continental United States—omitting air corps, service command, coast artillery, and the overseas garrisons—the existing mobile Regular Army combat troops available totalled 70,000 officers and men. These, together with the National Guard and certain Reserve elements, comprised the initial protective force, to be mobilized in case of emergency in the four existing Army territorial areas, with mission of carrying on until such time as a National Army might be raised. It was for the modernization of equipment and armament of all this force that the appropriations noted above had been allotted. With the normal two-year average time-lag necessary between placing of contracts and completion of manufacture of non-commercial critical items, the now authorized essential—but not complete—modernization program for this 165,000 Regular and 190,000 National Guard force could be expected to be fact in 1941.

Further complication in any emergency mobilization of this force in the United States would be the fact that these troops must come from widely scattered posts, marching at existing peace strength, and forming a melange of elements which so far had had for the most part but one prior mobilization test in each of the four Army areas—tests which by reason of lack of matériel, of time for necessary preliminary hardening, and

of suitable terrain, had never been 100 per cent complete.

On April 30 an Executive order created the Puerto Rican Department, with headquarters at San Juan, for the establishment of an advanced base—air and naval—to seal the Caribbean Sea to hostile encroachment and thus protect the western approaches to the Panama Canal. Establishment of further advance bases, and improvements to the existing Panama Canal defenses were also taken under immediate consideration.

On June 30 Gen. Malin Craig, retiring Chief of Staff, in his final report for the fiscal year 1939, called attention to the fact that modern developments, particularly in the air arm, had made it necessary to provide for a "more forward defense" by the Army for itself and for the Navy whose bases it must defend. He summed up the requirements of an economical, properly balanced position in readiness for this country as follows:—

1. An outpost line for security and the protection of the initial defense force, with the elements manning it, both ground and air, to be prepared for immediate action, their training and equipment to be complete and their strength sufficient to withstand attack until reinforced. Panama and Hawaii, properly strengthened, and the proposed installations in Puerto Rico and Alaska, constitute this general line.

2. The main position—the continental United States, manned by the Initial Protective Force, consisting of the Regular Army—less troops on outpost duty, and all the federalized National Guard, together with certain Reserves assigned to them in emergency. "It is evident and important," wrote General Craig, "that a certain proportion of these available forces must consist of immediately available infantry-artillery teams—small, seasoned, hard-hitting divisions—that are available for instant dispatch to reinforce our forward positions, to seize or hold naval and air bases and to destroy enemy bases."

On August 15 the second First Army maneuvers (the first were held in 1935) took place in the Plattsburg, N. Y., area, where under Lieut. Gen. Hugh A. Drum some 75,000 troops, Regular, National Guard, and Reserve, were gathered for two weeks of intensive training and sham battle. As was pointed out by General Drum at the time, this force was far short of the strength allotted to a type Army—some 321,000 men, and was also short in the essential automatic small arms, machine guns, light and heavy artillery, and truck transportation. Included in its field components was the 7th Cavalry Brigade, Mcz., our sole armored unit. The results of this maneuver, carried on with the existing strength of the units involved, indicated what was already known to the military—that lack of essential corps and army troops, lack of sufficient modern matériel, and the improvisation of staff and command elements necessitated by the existing shortage of personnel and matériel, would militate heavily against the immediate functioning of any of the field Armies as co-ordinated combat teams.

On September 5, President Roosevelt proclaimed the neutrality (q.v.) of the United States as the European struggle opened, following this by proclamation of a limited national emergency insofar as pertained to "The proper observance, the safeguarding and enforcing of the neutrality of the United States and the strengthening of our national defense within the limits of peace-time

authorization." On September 8, an Executive order followed, authorizing an increase in the Regular Army enlisted strength to 227,000—still some 53,000 short of the National Defense Act strength; and an increase in the National Guard to 235,000, still far short of the National Defense Act minimum of 424,000.

By the end of September a brigade of infantry and an additional coast artillery quota had been sent to the Panama Canal Zone to augment the garrison, and elements of field artillery, coast artillery—both antiaircraft and mobile harbor defense units, engineers, air corps, and auxiliary services to Puerto Rico, nucleus of the protective force for that base.

Furthermore, the remaining Regular mobile combat troops in the continental United States were reorganized into an army corps of five divisions, each of which was to be complete in all elements although at a peace strength, and certain essential corps troops—additional medium artillery, an antitank artillery battalion, a corps cavalry reconnaissance regiment, and command and staff elements—were provided.

The new infantry division formation was the result of the years of experimentation with the 2nd Division in Texas.

Its combat elements consist of three infantry regiments of three battalions each; the battalion consisting of three rifle companies and one heavy weapons company; two field artillery regiments, one of three battalions of three batteries each, totalling 36 75-mm. guns, and one of two battalions of two batteries each, totalling 16 155-mm. howitzers. Other organic elements include a command echelon, a battalion each of engineers, quartermaster and medical troops, and a company each of military police and signal corps. The division is partly motorized—that is, its transportation is motorized. For short hauls without supplies, its vehicles can transport the personnel. For long hauls, with supply, a portion of the personnel can be carried direct to the end of the day's march, the vehicles returning to pick up other elements which have started on foot, thus shutting if necessary the entire command. Combining motor transportation and marching, this type division may be expected to maintain a forty-mile-per-day rate indefinitely, as opposed to the twelve-fifteen mile daily rate of the old division. Its authorized peace time strength is 436 officers and 8,517 enlisted men.

It is a solution, in terms of modern matériel, of the problem of mobility and striking power—conflicting factors. The old type division had grown unwieldy for modern use. The authorized peace strength of the old division was approximately 13,500, its war strength about 24,000. Equipment of the rifle battalions of the infantry regiments with the new Garand semi-automatic rifle, firing eight rounds per clip to the five-round clip of the old Springfield Model of 1903, and the addition of machine guns both heavy and light, both 60-mm. and 81-mm. mortars, and 37-mm. antitank guns, has materially increased the potential fire power of these units while the direct artillery support remains in effect the same as in the old division—twelve guns per infantry regiment.

Other defense projects now in process include the organization of two additional mobile antiaircraft regiments, while Army air bases under way include Westover Field, Holyoke, Mass.; MacDill Field, Tampa, Fla.; Howard Field, Panama Canal Zone; Borinquen Field, Puerto Rico; McClellan Field, Sacramento, Calif.; and Hill Field, Ogden,

Utah. Organization of additional squadrons of Army Air Corps to use these bases was authorized on Dec. 28, 1939. New naval air bases include Kodiak and Sitka, Alaska; and San Juan, Puerto Rico.

Pending at the end of the last fiscal year, June 30, 1939, was a project for construction of a third set of locks and approaches in the Panama Canal, roughly paralleling the existing lock system, to facilitate passage of the United States Fleet and minimize the chances of blocking the canal by any opponent. The estimated cost of such construction is \$277,000,000.

The expansion program already authorized and appropriated for by Congress calls for augmenting the actual strength in all types of planes for the Army Air Corps from the 2300 previously authorized to an approximate total of 5500 by June, 1941, with production going along rapidly. By 1944 the Navy also will have 3000 planes instead of the approximate 1500 of all types in service at the beginning of September, 1939.

The Army Air Corps increases authorized by the last Congress included also pilot personnel. Between July 1, 1939, and September 28, 1940, it is estimated that more than 4,500 students will have been selected for primary flying training. To take care of the increased number of candidates the preliminary three months of primary flying training has been allocated to certain approved civilian flying schools, following which successful candidates pass to a three months' basic military flying training at Randolph Field, and in turn to a final three months' advanced training at Kelly Field. To date a total of two classes—14 Regular officers and 483 flying cadets, have successfully completed the courses at civilian flying schools and are now enrolled in the Randolph Field course. Based on past experience, approximately 52 per cent of the candidates entering the courses may be expected to graduate as military pilots.

For increasing the mobility of the new Army some 12,000 four-wheel drive trucks, which can negotiate almost any type of terrain, are being contracted for. To officer the five divisions and the corps strenuous efforts have had to be made, since no increase in Regular Army officer strength was provided in the Executive order of September 8. These steps include graduation early in 1940 of all present service school classes with exception of the Military Academy and the Army War College, and the utilization of young reserve officers in the combat branches, approximately 1300 other than Air Corps; this last step being dependent upon funds being made available by the next Congress. It is contemplated that Reserve officers so used will be placed on duty for six month periods, in the grades of second and first lieutenants. Acceptance of such active duty would of course be voluntary.

Certain changes in cavalry regimental organization are being made to increase fire power and flexibility of movement. The corps reconnaissance regiment mentioned above will be the 6th Cavalry, transformed into a squadron of horse furnished with sufficient motor transportation to carry both men and animals to the area to be reconnoitered, and a mechanized squadron of fast moving scout cars and a motorcycle troop.

The new 37-mm. antitank gun, of improved model designed by the Ordnance Department, will figure in the equipment of the infantry divisions, as in the corps antitank battalion, which will

consist of three companies of four each of these weapons, plus .50 caliber machine guns.

In field artillery developments recent improvements in mounts for the 75-mm. gun—still basically the French 75, constitute a major essential item of production. In addition a 75-mm. howitzer is in production for use with artillery units of the mechanized forces and for horse and motor-drawn artillery accompanying fast mobile units. Modernization of both 155-mm. howitzer and 155-mm. gun, of which stocks are on hand, will increase both mobility and range of these weapons.

Several steps remain to be completed however as 1939 draws to a close, before the hard-hitting, trained small divisions envisioned by General Craig as spearhead of the initial protective force come to full growth.

Training as combat teams—essential element—is now being carried out under the directive of the present Chief of Staff, Gen. George C. Marshall. The five divisions, at existing strengths, are training as units at Fort Benning, Ga.; Fort Sam Houston, Tex.; Fort Lewis, Washington; Camp McClellan, Ala., and Camp Jackson, South Carolina. The essential corps units available under the new program are being trained at Fort Bragg, North Carolina; Fort Knox, Ky., and Camp Ord, California. The cavalry concentration is at Fort Bliss, Texas. All these posts are in areas where year-round training is practicable. The program calls for further concentration of the entire army corps for mass maneuvers in the coming spring in southern areas. Additional training for the National Guard is also in effect.

But filling of the man-power quota is still incomplete, although recruiting efforts are now in full swing. At present the enlisted Regular Army strength is approximately 215,000. National Guard recruiting is also proceeding, with November strength noted as 214,000. However, the 227,000 Regular Army quota, even when filled, will not provide the man power for all the additional corps and army units necessary for the articulated functioning of the five-division army corps as a complete combat team.

Nor will the new organization be completely equipped with necessary matériel. That appropriated for and contracted for in 1939 was on the basis of the 165,000 Regular and 190,000 National Guard strength. It will be in the hands of the troops in 1941. The additional equipment for the increased strength has not yet been appropriated for. If ordered in 1940 it cannot be in the hands of the troops prior to 1942.

On December 20 announcement of pending creation of an Air Defense Command for the continental United States was made. This will include co-ordinated control of antiaircraft units, pursuit planes, and antiaircraft warning service of signal communications—all elements for the protection of an area against hostile attack.

Completion of the program as noted above depends in 1940 upon the will of the people. The War Department policy is summed up in the following excerpts from the Report of the Secretary of War, Mr. Harry H. Woodring, made public Dec. 28, 1939:—

"These are the days when by the threat of the exercise of armed might, or by the actual employment of military violence, the maps of the world are changed overnight. . . . There is but one road along which a peace-loving people can travel with security. That road is a national defense highway, with a foundation of such firmness as to assure

the support of any military load. . . . The determination of the numerical strength of the Army of the United States, with its various components, lies with the Congress of the United States. Whatever is the decision as to the size of our Army—our initial protective force . . . I must urgently insist that that force decided upon be complete as to personnel, as to matériel, and that it be 100 per cent efficient as to training. Our Military Establishment must be an 'Army in being'."

See AERONAUTICS; ARMAMENTS, COST OF; NAVAL PROGRESS.

R. ERNEST DUPUY.

MILK. See DAIRYING; NEW YORK.

MILLS COLLEGE. A college for women in Oakland, Calif., founded in 1852. The enrollment in the autumn of 1939 was 620, for the summer session of 1939, 368. The faculty numbered 101 members. The total productive funds amounted to \$1,910,864 and the total assets to \$4,639,192, while the gross income for the year ending June, 1939, was \$890,115. The library contained 77,000 volumes. President, Aurelia Henry Reinhardt, Ph.D., Litt.D., LL.D., L.H.D.

MINERALOGY. Several important textbooks, compilations, and editions dealing wholly or in part with mineralogy have been published during the year 1939.

The most important and significant of these is *The Birth and Development of the Geological Science* by Frank Dawson Adams, published in December 1938, too late for inclusion in last year's YEAR BOOK. The eminent author of this work combines with his notable scholarship the rare gift of lucid and vivid writing. This combination has produced a book that will be welcome not only by the world of science, which has long suffered from its lack, but by the general reader who will find here fascinating literature in a field that is but little known. Dean Adams has brought to his task a knowledge of the literature of his subject, both classical and modern, which can only be described as "encyclopedic."

The scope of the work will become evident when one considers such chapter headings as, "On the Generation of Stones," "Medieval Mineralogy," "Birth of Modern Mineralogy and its Development from Agricola to Werner and Berzelius," and "The Origin of Metals and their Ores." The mineralogist will find many such amazing citations as this one: "no less than twenty-seven Systems of Mineralogy were written by various authors in different countries of Europe, during the one hundred and twenty-eight years between 1647 and 1775." The book is illustrated by 14 half-tone plates, and 78 figures, many of them reproducing old engravings and wood cuts.

Following lines that somewhat overlap those of *The Birth and Development of the Geological Sciences*, the *Source Book in Geology*, by Kirtley E. Mather, and Shirley L. Mason, contains selections from the works of noted geologists who lived, wrote, and died between the middle of the 15th century and the present year. It is thus a compilation of selected passages, selected by the authors as representing "the most significant passages from the works of the most important contributors to the science of geology in their eras." Among the 132 geologists represented in this Hall of Fame, there are certainly some whose views on certain questions we would like to compare in a sort of "immortal symposium." The compilers have done this for us by arranging

groups of authors under subject headings, in a "Guide to Subject Matter" which precedes the index. Here we find such a heading as Cosmogony, with page references to Descartes, Leibnitz, Kant, Buffon, Laplace, Proctor, Bickerton, and Chamberlin. Other important groupings include, to name a very few of them, Fossils, with 17 citations ranging from da Vinci, c. 1500 to Owen, 1864; Igneous Rocks, Crystallography, Mineralogy, Physics of the Earth, Volcanism, and Ore Deposits. From the scant four names listed under the last named subject one misses those of the late Carl Richard Beck, and James F. Kemp, both notable authorities in their subject. However, Drs. Mather and Mason are both to be congratulated for getting such an amazing amount of classical geology into 681 pages.

Another compilation, more strictly mineralogical in character, is a *Descriptive List of New Minerals*, by George L. English. In 258 pages of his book Mr. English gives the determinative facts regarding upward of 2600 mineral names that have been added since the publication of the last edition of Dana's *System of Mineralogy* in 1892. As a work of reference this impressive alphabetical list represents a vast amount of research and a corresponding economy in time and labor for the reader who consults it. One of the most valuable features of Mr. English's work is his carefully prepared references to first notices of new species, which alone are calculated to save the student hours of search through a voluminous literature. There are, perhaps, too many "trade names" and local synonyms, but even these often include unexpected facts, like the hardness of carborundum, difficult to find elsewhere.

The 3d ed. of *Gems and Gem Minerals*, whose senior author is Dr. Edward H. Kraus of the University of Michigan, appears with Dr. Chester B. Slawson as the junior author in place of Dr. Edward F. Holden, who died while the 1st ed. was being printed. The revision and addition of new matter, which brings the work of Drs. Kraus and Slawson up to date, has resulted in 27 additional pages of text and 19 additional illustrations in the text. Moreover, of the 344 text figures 65 are new. These new illustrations are particularly in evidence in the chapter on Cutting and Polishing Gems, where a fine series illustrating the cutting of the Jonker diamond in 1935 is to be found. The most important innovation, however, is the introduction of four-color plates illustrating 80 gems both faceted and cut cabochon.

The new mineral species announced during 1939 include several of importance. A silicate of sodium and beryllium occurs as white and semi-transparent grains in the Kola Peninsula of Russia. It has been named *chkalovite*. *Kotoite*, a magnesium borate, is found as a granular constituent of dolomitic marble at the Hoe Kol mine, Suan, Korea. *Teineite*, occurs in sky blue prismatic crystals at the Tiene mine, Hokkaido, Japan; it is a hydrated copper tellurate. Also from Japan comes *abukumalite*, a phosphosilicate of calcium and yttrium, occurring in dark reddish-brown masses in the Abukuma range. The Belgian Congo, which has furnished many new species in the past has yielded *trievite*, a hydrated copper-cobalt oxide, occurring as a secondary black mineral at the Étoile du Congo mine. *Weberite*, is a sodium magnesium-aluminum fluoride occurring in pale gray grains in the cryolite of Ivigtut, Greenland. Borax Lake, Cali-

fornia, has furnished a new sodium chloroborate occurring in crusts and named *teepelite*.

HERBERT P. WHITLOCK

MINERALS. See the articles such as COAL, IRON AND STEEL, NICKEL, ETC.; also sections on minerals in State articles; BUSINESS REVIEW; METALLURGY; MINES, BUREAU OF.

MINES, BUREAU OF. The U.S. Bureau of Mines was organized in 1910 as a bureau of the Interior Department, transferred by Presidential order on July 1, 1925, to the Department of Commerce, and transferred back to the Interior Department on Apr. 24, 1934.

Under the amended organic Act approved Feb. 25, 1913, the Bureau is declared to be a bureau of mining, metallurgy, and mineral technology. It is the Bureau's duty to conduct investigations concerning the mining, preparation, treatment, and utilization of mineral substances with a view to improving health conditions, increasing safety, efficiency, and economic development, and preventing waste in the mining, quarrying, metallurgical, and other mineral industries.

Technical investigations with which the Bureau has been charged are the special duty of the Technologic Branch and the Health and Safety Branch. Studies in the economics of the mineral industries are conducted by the Economics and Statistics Branch. Fourteen experiment stations and six field offices, under the Technologic Branch, located in the more important mineral districts, study problems in the mining, treatment, and utilization of the various mineral materials, devoting their efforts largely to the solution of problems affecting the mineral industry of their respective regions. The Health and Safety Branch supervises the work of 15 mine safety stations or field offices, 2 mine rescue cars, and a number of mine rescue trucks. When mine disasters occur, these rescue cars or trucks are dispatched to the scene, where the crews assist in mine rescue work.

Studies looking toward the freeing of the United States from dependence on foreign countries for certain strategic minerals, the devising of processes which should facilitate the utilization of low-grade mineral deposits hitherto undeveloped, and the conservation of minerals through prevention of waste featured the investigative program of the Bureau of Mines during the fiscal year 1939.

Studies relating to the making of electrolytic manganese, the production of pure sponge chromium, and the manufacture of magnesium metal featured the work in metallurgy. Comparative tests on various types of low-rank coals from the West were made by the coal-hydrogenation laboratory. The Bureau's petroleum engineers continued engineering studies and field demonstrations designed to conserve this precious mineral resource. The Bureau produced 6,000,000 cubic feet of helium at the plant at Amarillo, Texas, during the year 1939, most of it being for Army and Navy use. Studies relating to nonmetallic minerals indicated that domestic clays may come to replace English clays, and pointed the way to important uses for coal refuse.

The Bureau continued its work of providing exhaustive statistical and economic data which have proven of the greatest practical importance to the mineral industries. During the fiscal year more than 120,000 persons in the mineral industries were given Bureau of Mines training courses

in mine rescue and first-aid methods. This was the largest number ever trained in a 12-month period. See METALLURGY.

JOHN W. FINCH.

MINES, MINE FIELDS. See EUROPEAN WAR.

MINIMUM WAGE. See LABOR CONDITIONS; LABOR LEGISLATION; WAGE AND HOUR ADMINISTRATION; ALBANIA under History.

MINING AND METALLURGICAL ENGINEERS, AMERICAN INSTITUTE OF. An organization founded in 1871 and incorporated under the laws of New York State in 1905 "to promote the arts and sciences connected with the economic production of the useful minerals and metals and the welfare of those employed in these industries." It is made up of 32 local sections and has 47 student affiliated societies in American colleges. On Nov. 30, 1939, there were 13,636 members, distributed as follows: Honorary, 17; members, 6915; junior members, 2427; associates, 603; Rocky Mountain members, 88; and junior foreign affiliates, 52. In addition there were 3534 student associates.

In addition to the monthly meetings of the local sections and regional meetings held in various important mining or metallurgical centres, an annual meeting, or four-day convention, usually beginning on the third Tuesday in February, is held in New York City. The medals and prizes awarded by the Society during 1939 for notable work in the field of mining and metallurgy were: The William Lawrence Saunders Gold Medal to Louis S. Cates; the Robert W. Hunt Award to Kenneth Charles McCutcheon and John Chipman; and the Alfred Nobel Prize to Ralph J. Schilthuis.

The Institute publishes *Transactions*, an annual in several volumes, containing the best papers of the year on mining and metallurgical subjects; *Mining Technology*, *Metals Technology*, and *Petroleum Technology*, technical pamphlets published several times during the year; *Mining and Metallurgy*, a monthly magazine; the *Directory*, which constitutes a "Who's Who" in the profession; and individual technical pamphlets and special volumes. In connection with three other societies, it maintains the Engineering Societies Library and an employment bureau. The president in 1939 was Donald B. Gillies, and the officers for 1940 are: President, H. G. Moulton; Vice Presidents, Erle V. Daveler, W. B. Heroy, Henry Krumb, Paul D. Merica, W. M. Peirce, and Wilfred Sykes; Treasurer, Karl Eilers; and Secretary, A. B. Parsons. Headquarters are in the Engineering Societies Building, 29 West Thirty-ninth St., New York City.

MINNESOTA. Area and Population. Area, 84,682 square miles, exclusive of State's part of Lake Superior; included (1930) other water, 3824 square miles. Population: Apr. 1, 1930 (census), 2,563,953; July 1, 1937 (Federal estimate), 2,652,000; 1920 (census), 2,387,125. Minneapolis had (1930) 464,356 inhabitants; St. Paul, the capital, 271,606; Duluth, 101,463.

Agriculture. Farmers in Minnesota harvested, in 1939, 18,901,800 acres of the principal crops. Corn, on 4,501,000 acres, made 204,796,000 bu. (estimated value on the farm, \$104,446,000); oats, on 3,939,000 acres, 151,652,000 bu. (\$37,913,000); barley, on 2,136,000 acres, 59,808,000 bu. (\$23,325,000); tame hay, on 3,076,000 acres, 4,773,000 tons (\$20,524,000); wheat, on 1,595,000 acres, 22,108,000 bu. (\$16,139,000); flaxseed, 1,223,000

acres, 12,230,000 bu. (\$19,201,000); potatoes, 239,000 acres, 20,315,000 bu. (\$11,173,000); rye, 525,000 acres, 7,350,000 bu. (\$2,572,000).

Manufacturing. Establishments engaged in manufacturing in Minnesota in 1937 numbered 3718 (in 1935, 3701); they employed 89,125 wage-earners (in 1935, 76,241) and paid them \$107,393,009 (in 1935, \$77,974,350); their products for 1937 totaled \$937,462,797 in value (for 1935, \$746,350,564), of which sum the part contributed by manufacture amounted to \$312,897,951 (for 1935, \$245,507,288). The factories averaged less than 25 wage-earning employees; the wages averaged about \$1200 a year; and the total contribution made by manufacture, to the value of products was one-third, as against higher ratios in States where intricate processes of manufacture were more the rule.

Three classes of manufacturing, each treating one leading kind of products of the farm, accounted for nearly two-fifths of the manufactured output of 1937; they were the meat-packers, the grain mills (chiefly flour mills), and the establishments making butter. Meat-packing, the leading industry in point of manufactured product, was carried on by 12 relatively large establishments employing, in 1937, 8537 wage-earners, who received in pay \$12,121,548; \$201,467,613 was the value of the packers' products; their own manufacturing processes contributed to this sum \$32,875,026. The grain mills numbered 65; employed 2372 wage-earners, who received \$3,341,897; and produced \$97,017,761 in value of output, to which sum they contributed \$14,079,738 by their own processes. Butter-making, conducted in 839 establishments (28 per cent of all the State's factories), employed 2639 wage-earners, paid them \$2,864,732, produced goods to the value of \$96,130,819, and contributed to this sum, by manufacture, \$9,726,765. The smaller industry of treating linseed, typical of the region, produced oil, cake, and meal totaling \$14,334,978. Two lines of fabrication, that of heating and cooking apparatus and that of refrigerating apparatus, each produced goods not far from \$16,000,000 in total.

The main industrial area, in and outlying Minneapolis and St. Paul, employed 55,509 wage-earners, paid them \$69,315,991, and produced, in goods, \$533,732,768. The manufactures of Minneapolis totaled \$262,877,781; those of St. Paul, \$157,289,987.

Mineral Production. Lacking coal, petroleum, and almost all the industrial metals, Michigan continued to hold a high place in mineral production by the sole reason of producing the bulk of the iron ore mined in the United States. The total value of the yearly production, for 1937, of minerals native to the State was \$152,107,070; as in other years, iron ore supplied all but about \$11,000,000 of the sum. The shipments of iron ore from the mines fell to 14,535,744 gross tons for 1938, from 47,878,042 for 1937; their yearly value fell to \$44,361,534, from \$141,542,594. The drop resulted from a sharp decline in manufacturing activity and not from conditions in the iron mines. The State Tax Commission's estimate of May 1, 1938, put the total of unmined iron ore in the State at 1,225,773,389 gross tons. Ore containing both iron and manganese, mined in the State and itemized separately from iron ore, was produced in 1937 to the quantity of 1,257,900 long tons and the value of \$3,451,795; the quantity mined in 1938 was but 276,607 tons.

Legislation. The regular biennial 90-day ses-

sion of the Legislature, which met in January, attracted notice throughout the country by passing a law for the regulation of labor relations with attention to the behavior of the organized laborers. While it also restricted employers, this act by its prohibitions to workers tended to counterbalance the leaning of the Federal Labor Act toward regulating the employer. The list of "unfair" practises, for employers, as set down in the Minnesota act, resembled that in the Federal law, but in addition there appeared a list of practises unfair for labor unions, notably sit-down strikes (seizure of the employer's premises) and strikes violating written agreement, both proceedings being forbidden. No striking was allowed until after two days' notice to the employer; the Governor might extend the period to as much as 40 days for reason of public welfare. A group of persons picketing an establishment on account of a strike was required to have actual strikers for a majority. Unions were forbidden to threaten and coerce workers who were not members. The act contained strict clauses for the protection of farmers and other third parties from strikers' attacks on vehicles. Strikers' familiar practise of preventing the free use of highway and street by people whom they opposed, while illegal under existing statutes, was made an infraction of the new act as well. The actions designated as unfair on the part of employers were mainly as in the National Labor Relations Act.

The Legislature also dealt with Governor Stassen's recommendations covering changes in the organization of the State administration with a view to more businesslike management of public affairs. Among other changes was the abolition of the State tax commission, replaced by a department of taxation under a single head. The law on persons delinquent in payment of the tax on property was made less severe. The State's Auditor, in order to improve control over State and local public finance, was required to prepare quarterly and yearly statements of the accounts of governing bodies, after a uniform system that their books must follow. Another officer, the Public Examiner, was to share in the duties of financial supervision. A civil-service act strengthened control over the personnel of the State's offices.

Political and Other Events. Harold E. Stassen, who took office as Governor in January, worked in accord with fellow Republicans who formed the majority in the Legislature. His stand was conservative, as opposed to the sometimes tumultuous popular activity of the liberals under the administrations of his predecessors Benson and Olson. A stoppage of work, backed by the Workers' Alliance, started early in July, among persons on the payroll of the WPA in several States; some of this group in Minnesota participated. When the WPA Administrator in Minnesota, Linus Glotzbach, dropped the non-workers to the foot of the seniority list, there ensued a violent strike, in which encounters (July 14 and 17) with police and deputy sheriffs in Minneapolis resulted in two deaths, one being that of a policeman. Federal prosecutions against about 150 charged with participation in strikers' efforts to prevent clients from gaining a living through the WPA were started in Minneapolis under indictments returned August thereafter; trials began in October, in which month eight of the defendants were convicted. Twenty five were convicted on December 4.

Nels W. Elsberg, formerly the State's High-

way Commissioner, was reported (May 13) to have been found guilty, in District Court, of conspiracy in connection with payment of \$71,000 in false claims against the Department. The removal of Conservation Commissioner Wenzel, for official misconduct, was ordered by Governor Stassen on November 23.

Officers. Minnesota's chief officers, serving in 1939, were: Governor, Harold E. Stassen (Rep.); Lieutenant-Governor, C. Elmer Anderson; Secretary of State, Mike Holm; Treasurer, Julius A. Schmahl; Auditor, Stafford King; Attorney-General, J. A. A. Burnquist; Commissioner of Education, John G. Rockwell.

MINNESOTA, UNIVERSITY OF. A coeducational State institution for higher learning in Minneapolis, founded in 1851. The 1939 autumn registration of collegiate grade students was 15,301, while the summer session enrollment for the same year was 7375. The full time equivalent number of faculty members of instructor's rank and higher for the year 1938-39 numbered 908. The income for the year ending June 30, 1939, amounted to \$11,992,080. Gifts received during the year amounted to \$487,492. The total of endowment funds for all purposes was \$16,536,206 on June 30, 1939. Income from endowment funds for the year 1938-39 totaled \$520,801. Buildings at the following estimated costs were under construction during 1938-39: Business Administration Unit of the Social Science Group, \$300,000; Forestry Building, \$250,000; State Board of Health and University Psychology Building, \$325,000; Coffman Memorial Union, \$1,982,000; Journalism Building, \$246,500; Museum of Natural History, \$272,000; Women's Dormitory, \$621,500; Dormitory for Graduate Students, \$220,000; Health Service Building, \$107,000. The library contained 1,073,906 volumes. Chancellor, Guy Stanton Ford, LL.D.

MINORITIES. See ARGENTINA, BELGIUM, BRAZIL, BULGARIA, BURMA, CANADA, CZECHOSLOVAKIA, DENMARK, ESTONIA, FRANCE, GERMANY, HUNGARY, ITALY, LATVIA, LITHUANIA, IRELAND, NORTHERN; POLAND, RUMANIA, SPAIN, SWITZERLAND, TURKEY, and YUGOSLAVIA under *Area and Population or History*; FASCISM; JEWS; REFUGEES.

MIQUELON ISLANDS. See ST. PIERRE AND MIQUELON.

MISSIONS, FOREIGN. See articles on various religious organizations for statistics.

MISSISSIPPI. Area and Population. Area, 46,865 square miles; included (1930) water, 503 square miles. Population: Apr. 1, 1930 (census), 2,009,821; July 1, 1937 (Federal estimate), 2,023,000; 1920 (census), 1,790,618. Jackson, the capital, had (1930) 48,282 inhabitants.

Agriculture. Mississippi harvested, in 1939, 6,996,000 acres of principal crops. Cotton, on 2,525,000 acres, gave 1,585,000 bales (\$72,118,000); the year's harvested acreage of cotton came to less than seven-tenths of the average for the decade 1928-37, but the yield to the acre, 301 pounds, ran correspondingly higher. Corn, on 2,839,000 acres, produced 35,488,000 bu. (\$26,261,000); tame hay, on 897,000 acres, 1,140,000 tons (\$11,514,000); sweet potatoes, 83,000 acres, 6,142,000 bu. (\$4,606,000); potatoes, 20,000 acres, 1,420,000 bu. (\$1,051,000); oats, 76,000 acres, 2,736,000 bu. (\$1,149,000).

Manufacturing. According to figures published by the U.S. Census of Manufactures in 1939, 1100 manufacturing establishments operated

in Mississippi in 1937 (in 1935, 1059); their wage-earners numbered 46,040 (in 1935, 36,367) and received in pay \$26,383,931 (in 1935, \$19,334,105); the value of manufacturers' products totaled \$190,670,510 (for 1935, \$120,330,001), to which sum the processes of manufacture in the State contributed \$76,224,685 (for 1935, \$49,521,480). Oil, cake, and meal made out of cottonseed furnished \$42,576,010 of the manufactured output of 1937. Goods woven from cotton attained \$6,932,363. Lumber and timber products, totaling \$35,507,143, did not include the products of the planing mills, an additional \$5,886,526. Clothing, largely shirts, was made to the total of some \$15,500,000.

Mineral Production. Exploration in 1938 failed to find petroleum in exploitable quantities, but in 1939 productive wells were driven in Yazoo County. Natural gas continued to supply the greater part of the yearly production of native minerals, which for 1937 totaled \$4,821,950. The production of natural gas amounted to 14,298 million cu. ft. for 1938, as against 13,348 million for 1937. All of the total obtained in 1938 came from the Jackson field, as the Amory field did not produce after 1937. The Jackson field suffered in 1938 from the encroachment of salt water in some of the wells and from a fire at one of the wells, which the State extinguished, thereafter reimbursing itself out of a temporary tax of 7.5 per cent on all the wells' output. Except for unintentional waste of gas, the product went by pipe lines to consumers. Its value for 1937 was stated as \$577,000 at the wells and \$3,041,000 on reaching the consumer. About 40 per cent of it was exported to Alabama, Florida, and Louisiana.

Education. For the academic year 1938-39 Mississippi's inhabitants of school age (from 6 years to 20) was stated as 843,239, comprising 379,238 whites and 464,001 Negroes. Enrollments of pupils in all public schools totaled 608,730 (308,883 white; 299,847 Negro); 536,209 enrollments were in the elementary group (white, 246,013; Negro, 290,196); 72,521 were in high schools (white, 62,870; Negro, 9651). Outside of these totals, junior and senior colleges had enrollments of 10,860 whites and 906 Negroes. Expenditure on public-school education, during the year, exclusive of that for debt and outlay, totaled \$13,646,068. Teachers in public schools numbered 16,105 (white, 10,175; colored, 5930); the year's salaries of the whole number averaged \$480.80.

Political and Other Events. The operation of the "Balance Agriculture With Industry" programme, adopted in 1936, was reported to have brought the State a substantial gain of manufacturing industry in the course of three years. As authorized by the statute of 1936, the Industrial Commission issued certificates of public convenience and necessity to each of many local communities; under power given by such a certificate, a community would hold an election on the question whether to issue bonds to pay for setting up a factory; in more than nine cases out of ten the voters would authorize the bonds, and commonly there would follow the construction of the factory and its sale or lease to a private firm, for operation. The sharp gain of Mississippi's manufacturing output from 1935 to 1937 was ascribed to this method of promoting the establishment of new enterprises. Instances of communities cited as favorably affected then or later were Natchez, on the Mississippi River, where a company employed 1200 people making tires with rubber imported

through New Orleans and floated up the river, cotton locally produced, and carbon black, obtained from natural-gas fields in States near by; Pascagoula on the coast, where a shipbuilding enterprise expected to employ 1500 people; and Laurel, with two industries, one a co-operative enterprise making starch from sweet potatoes and the other a firm fabricating "composition" boards out of young growth and the waste from saw mills. The readiness of some manufacturers to leave areas in the Northeastern States, affected by excessive taxation and powerful labor unions, tended to favor Mississippi's efforts. The designs of the authorities of that State were, reportedly, to establish many small enterprises, scattered, so far as feasible, among separate communities, thus to avoid creation of definitely industrial districts.

Elections. At the Democratic primary election Paul B. Johnson of Hattiesburg gained a lead over ex-Gov. Martin Sennett Conner, in the choice of a Democratic candidate for Governor; as this lead did not suffice under the election law, there followed (August 29) a runoff, in which Johnson was chosen. As no organized opposing party existed in the State, Johnson's subsequent formal election on November 7 was, in effect, assured by the August vote. The primary campaign provided a lively contest; U.S. Senator Harrison, not wholly in accord with the Federal Administration, favored Conner, while the State's other Senator, Bilbo, supported Johnson, who in turn had campaigned in 1935 and had then been regarded as a disciple of the political principles of Huey Long of Louisiana.

Officers. Mississippi's chief officers, serving in 1939, were: Governor, Hugh L. White (Dem.); Lieutenant Governor, J. B. Snider; Secretary of State, Walker Wood; Attorney-General, Greek L. Rice; Treasurer, Newton James; Auditor, Carl N. Craig; Superintendent of Education, I. S. Vandiver.

MISSISSIPPI, UNIVERSITY OF. A coeducational, State institution of higher learning at University, Miss., chartered in 1844. The enrollment for the autumn of 1939 was 1400 (1011 men, 389 women). The enrollment for the summer session of 1939 was 473. There were 115 faculty members at opening of the 1939 session. The endowment amounted to \$733,808, while the income for the year, exclusive of subsistence, was \$603,310.47. The library contained 68,515 volumes. Chancellor, Alfred Benjamin Butts, M.A., Ph.D., LL.B.

MISSOURI. Area and Population. Area, 69,420 square miles; included (1930) water, 693 square miles. Population: Apr. 1, 1930 (census), 3,629,367; July 1, 1937 (Federal estimate), 3,989,000; 1920 (census), 3,404,055. St. Louis (1930) had 821,960 inhabitants; Kansas City, 399,746; Jefferson City, the capital, 21,596.

Agriculture. Farmers in Missouri harvested in 1939 an acreage of 12,201,500 in the principal crops. Corn, on 4,229,000 acres, made 122,641,000 bu. (estimated value on the farm, \$66,226,000); wheat, on 1,773,000 acres, 29,241,000 bu. (\$19,591,000); tame hay, 2,954,000 acres, 3,222,000 tons (\$18,365,000); cotton, 375,000 acres, 440,000 bales (\$19,360,000); oats, 1,860,000 acres, 40,920,000 bu. (\$11,548,000); potatoes, 53,000 acres, 4,664,000 bu. (\$2,938,000); grain sorghums, 225,000 acres, 3,600,000 bu. (\$2,304,000). A noteworthy development in the agriculture of the cotton counties was the rise of the average yield per acre of Missouri cotton to 561 lb. for 1939, the highest in that year for any State but Cali-

fornia and 79 per cent above the average for the decade 1928-37. This rise in its earlier stage was reported to have attracted new purchasers to the land and, affecting the system of cotton culture, to have played a part in the tendency, noted below under *Events*, to dispense with the tenant farmer.

Manufacturing. In 1937 the manufacturing establishments in Missouri numbered 4291 (in 1935, 4379); they employed 186,831 wage-earners (in 1935, 157,683) and paid them \$202,585,847 (in 1935, \$153,734,808). The year's output of manufactured products in 1937 totaled \$1,505,383,002 (in 1935, \$1,183,637,068), of which sum the part attributable to the process of manufacture attained \$560,398,068 (in 1935, \$440,928,492). Of the 140 classifications for which the U.S. Census of Manufactures showed separate totals, only two made more than \$100,000,000 each in products during 1937. The products of the meat-packers amounted to \$116,576,053; those of the makers of boots and shoes, to \$103,253,379. The boot-and-shoe industry led as a payer of wages, for its 57 manufacturing establishments had, in 1937, 26,110 wage-earners and paid them \$22,367,811. The meat-packers' 40 establishments had 5066 wage-earners, who received \$6,931,060. The wages in either group came to somewhat less than half of the value imparted to goods by manufacture; this value totaled \$47,005,634 for the boot-and-shoe industry and \$14,515,116 for the packing industry. The grain mills (chiefly flour mills) produced \$61,597,878 in yearly total of output, in 1937; the output of electrical machinery and supplies ran to \$53,090,558; the value produced by manufacturers of leading classifications of garments exceeded \$55,000,000.

In St. Louis were produced \$766,992,585 in manufactures, constituting two-thirds of the whole State's total for 1937; the factories in St. Louis employed in that year 95,261 wage-earners, paid them \$111,305,834, and contributed by manufacture, \$303,925,775 to the value of the year's output. Kansas City, Mo., for which the Census did not publish separate figures to cover 1937, attained for 1935 totals from one-third to one-fourth as great as those for St. Louis, thus ranking as the State's next most important industrial centre.

Mineral Production. Of Missouri's production of native minerals, totaling \$52,446,272 for 1937, lead made up more than one-third while coal and cement each approximated one-seventh. Mines' shipments in 1938 contained lead, zinc, and silver to the total value of \$12,396,948, as against \$21,482,955 for 1937. The silver, in minor amounts, was obtained in the recovery of the lead. Mines in the southwestern area produced chiefly zinc; those in the southeastern area, chiefly lead. Ore shipped in 1938 contained 112,027 tons of lead, as against 157,631 tons for 1937; by value, \$11,226,484 (1938) and \$18,600,458 (1937). Zinc in mines' shipments decreased to \$981,696 (1938) from \$2,678,000 (1937). The yearly mining of coal diminished to 3,412,000 net tons (1938), from 4,091,000 tons (value, \$7,978,000) for 1937. Cement shipped from mills amounted to 4,570,389 barrels for 1938 and 4,565,448 for 1937; in total value, \$6,871,120 (1938) and \$7,041,016 (1937). By a change of classification the U.S. Bureau of Mines ceased in 1939 to treat the manufacture of pottery as one of the State's mineral industries. This industry, formerly included in the class of clay products, had caused clay products to be

listed in the YEAR BOOK as a leading mineral industry of the State.

Education. Missouri's inhabitants of school age (from 6 years to 20) were reported for the academic year 1938-39 as 946,475. Enrollments of pupils in all public schools totaled 712,326; this comprised 519,830 in elementary study and 192,496 in high schools. The year's expenditures for public-school education totaled \$57,875,789; the teachers numbered 26,342.

Legislation. A regular biennial session of the Legislature opened January 4. The Federal Social Security Board had not long before cut off the Federal contribution to the State's old-age assistance, having found Missouri's system of payment too lax. As the State had to amend the law on the subject in order to bring back Federal monthly aid, clauses otherwise altering the old law were passed too. The acts lowered age of qualification to 65 years, from 70, specified the basis of need for assistance in such a way as to offset a recent decision of the State Court of Appeals holding voluntary outside aid to the applicant not to come into consideration, and restricted the power of State circuit courts to reverse the State Social Security organization's decisions against applicants.

The biennial appropriations were enacted without resort to new taxation for meeting an apprehended moderate deficiency of income. The 2-per cent sales tax was made to remain in force until the end of 1941. Helping Governor Stark in his efforts to break the political organization of Thomas J. Pendergast, Democratic leader in Kansas City, the Legislature enacted a bill stripping Kansas City of its power to choose its own police head and vesting the control of the police in a commission of four men to be appointed by the Governor. An act regulating the business of making small loans subjected "salary-buyers" to the jurisdiction of the State Finance Department and raised the monthly rate of lawful interest on such loans to 3 per cent, from 2½, assertedly in order to attract legitimate companies into the business. An act signed by the Governor under the impression that it concerned strikers' taking possession of an employer's premises gave the owner of the premises the right to apply to the courts for a speedy remedy by a suit for unlawful detainer; the act was elsewhere declared, however, to be meant to apply particularly to farmers' tenant-helpers who would not heed notice to vacate.

Political and Other Events. Thomas J. Pendergast, long Democratic leader of Kansas City, pleaded guilty and was sent to prison on a Federal indictment. This indictment, obtained April 7 by Maurice M. Milligan, U.S. District Attorney at Kansas City, charged Pendergast with evasion of Federal income taxes, due on income to the amount of \$433,550 that he had received in 1935 and 1936, and \$315,000 of such income was stated to have been received in connection with the settlement of a long maintained dispute between the State of Missouri and a group of 137 insurance companies over \$9,500,000 collected and impounded during a period when the companies' rates were in question; R. E. O'Malley, the State's Superintendent of Insurance, charged with having similarly received \$62,500 and failed to pay the tax thereon, was also indicted. The implication of the indictment of Pendergast was that he had received the specified payments in return for using his influence for the settlement of the issue over the above-mentioned \$9,500,000: a

settlement according the policyholders 20 per cent and giving 80 per cent to the companies.

Pendergast pleaded guilty, May 22, to evasion of Federal income taxes, and was sentenced to serve 15 months in a Federal prison. He entered the Leavenworth Prison May 29. The State of Missouri instituted proceedings to obtain from insurance companies the sum that they had received in the \$9,500,000 settlement, and a special Federal Court of 3 members ordered the companies June 1 to return the money to Court custody with a view to its later distribution among policyholders. C. R. Street, alleged to have represented the companies in dealings with Pendergast, had died after the settlement but before the indictments. Federal demands on Pendergast for \$830,493, inclusive of penalties and of alleged income-tax evasions not tried, were reported to have been settled late in December on the basis of a payment of \$350,000 to be made by Pendergast. This did not cancel his prison sentence.

Governor Stark, elected in 1936 with the aid of the Pendergast vote in Kansas City, Mo., did not take any public part in the Federal proceedings against the Kansas City leader, and U.S. Attorney-General Murphy declared that the conduct of the case had been left in the hands of the local U.S. District Attorney. The manner in which information against Pendergast had come into Federal hands was not disclosed; however, President Roosevelt affirmed at a press conference, April 11, reported by the Associated Press, that Governor Stark had mentioned the subject of Pendergast to him some time before and that the President had referred the Governor to the Treasury, which would investigate tax matters. Stark had, prior to the Federal prosecution of Pendergast, called upon the Legislature, March 23, to take from Kansas City the control of its own police and put these under the rule of a commission of appointees of the Governor (see *Legislation*, above); and in an address to the inhabitants of the State, by radio, he called upon them, April 2, to support his efforts by letters to Legislators.

The Federal Social Security Board stopped, with the end of 1938, the monthly Federal contribution toward the cost of old-age assistance in Missouri; it had held the State's law governing the distribution of this assistance to be unsatisfactory as a safeguard to the proper dispensation of Federal money. The State paid out of its own cash entirely the usual monthly distribution in January; it amounted to \$1,390,862, divided among 74,821 persons. Nothing was paid in February; on March 9, in view of the Legislature's amendment of the law governing the payments, the Federal Board resumed the grants to the State, making up also the sums that it had not paid for January and for February.

"Share-croppers" (metayers) to the number of 1500 persons or more made a striking demonstration of their neediness in January; during wintry weather these people, farmers and their families, encamped along roads in the southeastern part of the State, mainly in New Madrid and Mississippi counties, having left farms where they said that they could not subsist. Federal agencies fed them and the State authorities put them back in the houses that they had left. The Federal Bureau of Investigation looked into their treatment and reported that none of a group of 1161 whose cases were examined had been evicted; it held that the area had a surplus of agricultural labor, augmented

by the spread of mechanized farming and by some features of the Federal activities for agriculture and for poor-relief. The demonstrators were for the most part Negroes; the heads of families had been cultivating land under contracts by which they delivered to the landlord a share of the crop. As the Federal agricultural aid planned for 1938 had increased the tenant's share of benefit payments it had become advantageous to landowners to hire laborers instead of renting the land for a share of the crop. See PRISONS.

Affairs of Kansas City. Kansas City, Mo., had long maintained a City Manager; the Democratic organization headed by Thomas J. Pendergast had won at the municipal polls for 12 years, during which it maintained as City Manager H. F. McElroy. In January a grand jury of Jackson County (containing the city) met to consider irregularities among the local officials; it turned in, up to its adjournment on May 11, 167 indictments. Resulting prosecutions were handled by the Attorney-General, who brought action to oust County Prosecutor W. W. Graves, Jr., and prosecuted other officials. In January also, a Federal grand jury started the investigation of persons suspected of gaining hidden income from illicit gambling establishments and thus evading the Federal income tax. There followed in April the downfall of Pendergast, whose political power evaporated as soon as he had been indicted on the Federal charge. City Manager McElroy and Director of Police Otto P. Higgins resigned. Bryce B. Smith, who as Mayor had occupied a relatively inconspicuous position, named his own secretary, E. C. Zachman to act as City Manager; later Governor Stark, appointing a commission created by the Legislature, put under its direction the city's police (July 8).

Officers. Missouri's chief officers, serving in 1939, were: Governor, Lloyd C. Stark (Dem.); Lieutenant-Governor, Frank G. Harris; Secretary of State, Dwight H. Brown; Auditor, Forrest Smith; Treasurer, R. W. Winn; Attorney-General, Roy McKittrick; Superintendent of Public Schools, Lloyd W. King.

MISSOURI, UNIVERSITY OF. A State institution of higher education in Columbia and Rolla, Mo., founded in 1839. The enrollment for all divisions for the first semester of 1939-40 was 5573, of whom 4142 were men and 1431 were women. The total enrollment for the 1939 summer session was 3313. There were 456 faculty members. The endowment amounted to \$2,469,179, while the total income from all sources was \$4,578,471. The libraries contain approximately 430,000 volumes. In 1939 new buildings were completed at a cost of \$450,000. A gift of \$80,000 was received from the Rockefeller Foundation in 1939 to aid in the erection of a laboratory for Genetics Research. President, Frederick A. Middlebush, Ph.D., LL.D.

MODERN ART, MUSEUM OF. See ART MUSEUMS; ART EXHIBITIONS.

MODERN LANGUAGE ASSOCIATION OF AMERICA, THE. An organization founded in 1883, incorporated in 1900, and devoted to advancement of research in modern languages and literatures. It issues a quarterly *PMLA* and Supplement of about 1500 pages yearly, including an annual bibliography of American work in its field. Its four book Series and Joint Publications approximate 50 volumes. The membership exceeds 5200, the annual dues are \$5, and 425 libraries subscribe to its publications. During the

Christmas holidays it holds an annual three-day convention at which nearly 200 papers are read. In 1939 this meeting was held in New Orleans, La.; in 1940, at Harvard University. The permanent invested funds of the Association total slightly over \$100,000.

During 1939 the Association established a permanent commission on Trends in Education affecting the modern languages; the chairman was Dean Henry Grattan Doyle of George Washington University, Washington, D. C.

The Association's joint publication, *A History of American Magazines*, by Prof. Frank Luther Mott, was awarded a Pulitzer Prize (q.v.).

The President in 1939 was Prof. H. Carrington Lancaster of Johns Hopkins University. Percy W. Long is secretary, Lyman R. Bradley, Treasurer, and LeRoy Elwood Kimball, Managing Trustee. Executive officers are at New York University, 100 Washington Square, New York City.

MOLDAVIAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See UKRAINIAN SOVIET SOCIALIST REPUBLIC.

MOLLUSKS. See ZOOLOGY.

MOLUCCA ISLANDS. See NETHERLANDS INDIES.

MOLYBDENUM. The United States is the principal producer of this metal which is mined and sold to primary consumers in the form of molybdenum sulphide concentrates. Its most important use is in alloy steels, in which it is introduced in fractional quantities, averaging between 0.2 and 0.4 per cent. One producer, Climax Molybdenum Co., Colorado, furnishes about 75 per cent of the world's output and 85 per cent of the domestic production. Total United States production is over 90 per cent of the world output. Exports from the United States range annually from 50 per cent to 75 per cent of domestic production.

The importance of the metal in steel manufacture gives it a strategic position in time of war. This was recognized by the United States in December 1939, when the State Department laid a "moral embargo" on exports of molybdenum to nations engaging in "unprovoked bombing and machine gunning of civilian populations from the air."

H. C. PARMELEE.

MONACO, mōn'a-kō. A Mediterranean principality surrounded on its land sides by the French department of Alpes-Maritimes. Area, 370 acres; population (Jan. 1, 1938 census), 23,956 (1761 Monagasques, 8540 French, 9724 Italians, 1902 English, and 2029 others). Towns: Monaco, capital, 1938 inhabitants; La Condamine, 11,339; Monte Carlo, 10,681. There is no cultivation as all of the available land has been built over. A yearly average of over 2,000,000 visitors and the gambling concession at Monte Carlo are the main sources of revenue. There is a small sheltered harbor, 47 acres in area, with a depth of 90 ft. at the entrance and 24 ft. at the quay. Budget (1938): Revenue, 39,023,187 francs; expenditure, 38,438,886 francs (franc averaged \$0.288 for 1938). The government is administered, under the authority of the reigning Prince, by a secretary of state who is aided by a council of government. Legislative power is exercised by the Prince and a national council of 12 elected members. Ruler, Prince Louis II (succeeded on June 26, 1922). On Apr. 29, 1939, Prince Louis II was raised to

From Annual Report of the Secretary of the Treasury, 1939]

Comparative totals:

Does not include gold other than that held by the Treasury

- Includes \$1,800,000,000 exchange stabilization fund and \$142,383,416 balance of increment resulting from reduction in weight of the gold dollar.

• This total includes credits with the Treasurer of the United States payable in gold certificates in (1) the gold certificate fund—Board of Governors, Federal Reserve System, in the amount of \$10,699,275,120,

and (2) the redemption fund for Federal Reserve notes in the amount of \$8,842,394.

NOTE.—A part of the gold and silver included in the stock of money is held as a reserve against other kinds of money, as follows: (1) As a reserve for United States notes and Treasury notes of 1890 gold bullion (these notes are being redeemed for silver dollars at a rate of 1.29 to 1); (2) as currency or Treasury notes of 1890—equal dollar amount in standard silver dollars (these notes are being redeemed for silver dollars at a rate of 1.29 to 1).

The Federal Reserve notes are obligations of the United States and a first lien on all the assets of the United States Government, including gold certificates, silver certificates, and securities held by the Treasury Department.

paper as is eligible under the terms of the Federal Reserve Act, or, until June 30, 1941, of direct obligations of the United States if so authorized by a majority vote of the Board of Governors of the Federal Reserve

Reserve notes in actual circulation. Gold certificates as herein used includes credits with the Treasurer of the United States payable in gold certificates. A Federal Reserve note does not include a Federal Reserve note in excess of retirement.

in process of retirement

the rank of a general commanding a division in the French Army by Premier Edouard Daladier.

MONETARY UNITS OF FOREIGN COUNTRIES. See CURRENCIES, VALUE OF FOREIGN.

MONEY, UNITED STATES STOCK OF. The table on page 499 from the 1939 annual report of the Secretary of the U.S. Treasury shows the distribution of the stock of money in the United States on June 30, 1939, with comparisons for May 31, 1939, June 30, 1938, Oct. 31, 1920, Mar. 31, 1917, June 30, 1914, and Jan. 1, 1879.

MONGOLIA. An extensive, vaguely defined region of east-central Asia, bordered by the Soviet Union and Tannu Tuva (q.v.) on the north Manchoukuo on the east, China proper on the south, and Sinkiang (Chinese Turkestan) on the west. It is divided by an irregular east-west line through the Gobi desert into Outer Mongolia, on the north, and Inner Mongolia, on the south.

Inner Mongolia. Geographically Inner Mongolia includes the three Chinese provinces of Suiyuan, Ningsia and Chahar, and Jehol and part of Hsingan Province in Manchoukuo. Politically the term is now generally used to include only Suiyuan, Ningsia and Chahar. According to 1937 estimates of the Chinese Ministry of Interior, their combined area is 339,068 square miles and the population 7,142,793, all Chinese except for about 1,500,000 Mongols.

Japanese troops during 1937-38 occupied the eastern sector of Inner Mongolia to a point west of Paotowchen, terminus of a railway from Peiping, and in 1938 an autonomous Mongol regime headed by Prince Teh and known as the Meng-chiang Federated Committee was organized under Japanese auspices with its capital at Kweiwha in Suiyuan. Most of Ningsia Province and part of Suiyuan apparently remained under Chinese control in 1939 (see CHINA under *History*).

Agriculture, carried on almost exclusively by Chinese, and stock raising are the principal occupations. Rye, potatoes, buckwheat and wheat are the chief crops. Trade is mainly with the Japanese-controlled areas in North China. The Japanese in 1938 and 1939 brought the controlled areas of Inner Mongolia within their newly organized North China currency and banking system. They elaborated a programme for the joint economic development of North China and Inner Mongolia that called for the completion of 1659 kilometers of railways and the annual production of 2,300,000 metric tons of iron and steel, 13,900,000 metric tons of coal, and 500,000 metric tons of wool in Inner Mongolia by the end of 1941.

Caskets containing the remains of Genghis Khan and his two wives were removed by Chinese and pro-Chinese Mongols from the famous conqueror's tomb at Etshinhuro, Inner Mongolia, in June, 1939, and taken to the interior of China to prevent their capture by the Japanese. With the caskets went many valuable relics of the Mongol emperor. It was reported that they were stored in a secret hiding place.

Outer Mongolia. The same Chinese estimate cited above placed the area of Outer Mongolia at 625,946 square miles and the population at 2,077,669. A British estimate gives the population as 540,000, a Japanese estimate as 840,000. Ninety per cent of the inhabitants are Mongols, chiefly nomads, and the rest Russians and Chinese. The capital, Ulan Bator Khoto (Urga), has about 70,000 population; Altanblak, 20,000.

Outer Mongolia is a soviet republic, the inde-

pendence of which is guaranteed by the Soviet Union under a mutual assistance pact signed Mar. 12, 1936. However the Soviet Union in 1924 recognized the suzerainty of the Chinese Republic over the region. The political and economic system have been reorganized on the soviet model, and Outer Mongolia appears destined for incorporation in the U.S.S.R. unless it is conquered by the Japanese. The ownership of lands, forests, mineral resources and factories has been collectivized. The Mongol nobility and numerous Lamaist priests and monks were deprived of their privileges and of the right to vote, which is granted all male and female workers over 18 years of age. Foreign and domestic trade is a monopoly of the People's Central Co-operative; foreign trade is carried on exclusively with or through the Soviet Union. Soviet instructors are said to have trained and equipped with modern arms a Mongol army of 250,000 men. The government is in the hands of the Mongolian People's Revolutionary Party. The only political party permitted, it had about 12,000 members in 1939 and was controlled by the Comintern. Supreme authority rests in an elective assembly (Great Huruldan), which meets at least once annually and while in recess delegates executive powers to a Little Huruldan of 30 members, which in turn appoints a Premier and executive committee.

Since the revolution of 1924 broke the feudal power of the nobility and priesthood, there has been a marked spread of education and expansion of economic activity. In 1938 there were 70 elementary schools, six high schools, and many traveling schools, as well as vocational, medical, and veterinary schools. Stock-raising, game hunting, agriculture, manufacturing, and mining, in the order named, are the chief occupations. Livestock estimates for 1934 were 1,638,200 horses, 2,068,000 cattle, 12,984,800 sheep, 3,884,000 goats, and 531,900 camels. Meat, milk products, hides and skins, wool, furs, wheat, rye, millet, and coal are the main products. Extensive mineral resources remain undeveloped. State factories, all erected since 1924, produce machinery, washed wool, wool textiles, felt, leather, sheepskin coats, shoes, and electric power.

The first railways in Outer Mongolia—connecting Ulan Bator Khoto with the Nalaiha coal mine 22 miles distant and linking Kiakhta with the Trans-Siberian Railroad at Ulan Ude—were reported to have been completed in 1939. The capital is connected with Ulan Ude by truck road and airline. Steamers ply the Selenga and Orkhon Rivers. However caravans still handle the bulk of internal transport. There is a state banking and monetary system, the unit of currency being the tukrik containing 17 grams of pure silver.

For the extensive fighting between Soviet-Mongolian and Japanese-Manchoukuoan forces along the disputed Mongolian-Manchoukuoan frontier during 1939, see MANCHOUKUO under *History*.

MONTANA. Area and Population. Area, 146,997 square miles; included (1930) water, 866 square miles. Population: Apr. 1, 1930 (census), 537,606; July 1, 1937 (Federal estimate), 539,000; 1920 (census), 548,889. Helena, the capital, had (1930) 11,803 inhabitants.

Agriculture. Montana harvested, in 1939, 6,425,000 acres of principal crops. Wheat, on 3,664,000 acres, produced 56,608,000 bu. (estimated value on the farm, \$33,965,000); tame hay, 1,290,000 acres, 1,900,000 tons (\$9,500,000); sugar

beets, 75,000 acres, 891,000 tons (estimated value of previous year's crop, 1938, \$4,511,000); oats, 291,000 acres, 8,002,000 bu. (\$2,161,000); barley, 212,000 acres, 5,088,000 bu. (\$1,832,000); potatoes, 17,000 acres, 1,530,000 bu. (\$1,377,000); corn, 136,000 acres, 1,768,000 bu. (\$1,061,000).

Manufacturing. In 1937 the manufacturing establishments in Montana numbered 515 (in 1935, 478); they employed 11,268 wage-earners (in 1935, 8725), who received \$15,757,784 (in 1935, \$92,862,516); these establishments manufactured \$176,278,814 in goods (\$122,430,385 in 1935), to which their manufacturing processes contributed \$42,237,592 (in 1935, \$29,567,869). The important output of the works near Anaconda, for smelting and refining copper was not separately stated in the U. S. Census of Manufactures for 1937, which carried an output of \$114,173,304, the major part of the manufactured output of 1937, as produced by "other industries." Among the statistically covered industries were 16 petroleum refineries, whose product of 1937 attained \$10,892,921; 5 beet-sugar factories of which the output was \$9,389,256; and a total of \$9,992,709 in lumber and timber products from 73 establishments.

Mineral Production. The yearly production of native minerals in Montana was computed, for 1937, as having a total value of \$82,086,815. All of this sum was made up by gold, silver, copper, lead, and zinc, except for some \$23,000,000. Of this latter sum, petroleum, natural gas, and coal were the chief components. The production of petroleum fell off to some 4,907,000 barrels for 1938, from 5,805,000 barrels (value, \$7,300,000) for 1937. The 24,675 million cu. ft. of natural gas produced in 1937 were reported as having a value of \$6,667,000 at the points where the gas was consumed and of \$924,000 at the wells where the gas originated. The withdrawal of natural gas from wells in 1938, commonly limited to demand from consumers, declined to 20,463 million cu. ft. The mining of coal diminished moderately, to a total of some 2,804,000 net tons for 1938, from 2,965,193 (value, \$4,423,000) for 1937.

Mines' production of recoverable gold, silver, copper, lead, and zinc in Montana aggregated approximately \$40,800,700 for 1939, as against \$28,096,746 for 1938. The increase made up only part of the decline from the total for 1937. The production of copper, accounting for four-ninths of the combined gain over 1938, rose to some 197,110,000 lb. (1939), from 154,426,000 (1938); by value, to \$20,499,440, from \$15,133,748. That of zinc jumped to 69,700,000 lb. (1939), from 17,688,000 (1938); by value, to \$3,694,100, from \$849,024. The output of gold mounted to 255,600 ounces (1939), from 203,313 (1938); by value, to \$8,946,000, from \$7,115,955. The yield of silver kept pace, going to 8,898,450 oz. for 1939, from 6,403,962 for 1938; by value to \$6,040,160, from \$4,139,935. The output of lead nearly doubled in value, \$1,621,000 for 1939 as against \$858,084 for 1938.

Education. Montana's inhabitants of school age (from 6 years to 21) were reported for 1938 as 160,109. Enrollments of pupils in the academic year 1937-38 (the latest covered in statistics issued) totaled 110,403; of these, 78,178 were in the elementary group; 31,980, in high schools; 245, in kindergartens. The year's expenditures for public-school education amounted to \$12,517,712, exclusive of payments out of new issues of bonds. Of this total the State government contributed \$2,537,939.

Legislation. The Legislature's regular biennial session convened in January. It made an effort to outbid other Rocky Mountain States seeking the patronage of persons establishing residence in order to sue for divorce. An act was passed, permitting persons to enter suit after a residence of only 30 days, as against 42 days required in Nevada, Idaho, and Wyoming. Governor Ayers vetoed the bill on the ground that Montana should not "have the stigma of commercializing the domestic troubles of sister States." By a close vote the lower house sustained his veto.

The State's income tax was made to apply to Federal salaries.

Political and Other Events. The Fort Peck Dam, barring the Missouri River, received, early in November, the last of the billion and a quarter yards of earth forming its basic mass. The finishing of its surface remained to be done, and shafts for a hydroelectric station had yet to be made. The building of the dam started in 1934 and was conducted by the Army Engineers. The reservoir above the dam, accumulating water since the end of June, 1937, formed in November, 1939, a lake 24 miles long, holding an estimated 50 billion gallons of water and expected to attain its full length of 180 miles in about five years more. The expected cost of the dam was \$114,000,000. It was eventually to aid navigation of the Missouri River farther down stream, by evening the flow and thus reducing extremes of high and of low water.

Difficulty within the organization of the State University of Montana took on during the year a public aspect. Disagreement between President Simmons of the University and several members of its faculty was investigated both by a legislative committee and by a committee of the State's Board of Education. The latter charged five professors with not having co-operated with Simmons and called on them to resign. One left, to teach at the University of Oregon.

Officers. Montana's chief officers, serving in 1939, were: Governor, Roy E. Ayers (Dem.); Lieutenant-Governor, Hugh R. Adair; Attorney-General, Harrison J. Freebourn; Secretary of State, Sam W. Mitchell; Treasurer, Ray N. Shannon; Auditor, John J. Holmes; Superintendent of Public Instruction, Ruth Reardon.

MONTANA STATE UNIVERSITY. A State institution for higher education of men and women at Missoula, Mont., established in 1895. The enrollment for the autumn of 1939 was 2018; in the summer session of 1939, it was 841. The staff of the University totaled 136 including a faculty of 91. The income for current expenditures for the year amounted to \$475,338. There were about 262,695 volumes in the library. A Chemistry-Pharmacy Building was completed at a cost of \$300,000, and an addition to the Natural Science Building, at a cost of \$51,274. President, George Finlay Simmons. See MONTANA.

MONTE CARLO. See MONACO.

MONTSERRAT. See LEEWARD ISLANDS, BRITISH.

MONUMENTS, NATIONAL. See NATIONAL PARK SERVICE.

MOONEY, TOM. See CALIFORNIA.

MOORE, HUGH KELSEA. An American chemical engineer, died in Dunedin, Fla., Dec. 18, 1939. Born in Andover, Mass., Jan. 3, 1872, he studied at the Massachusetts Institute of Technology from 1893-96. His first employment was obtained with the Electro-Chemical Co. at Rumford Falls, Me., in 1897. Until 1903 he was with the Moore

Electro-Chemical Co. and the American Electro-Chemical Co., when he joined the Burgess Sulphite Fibre Co., later Brown Co. He retired in 1934 as chief chemist and chemical engineer.

One of the country's outstanding chemical engineers, Moore invented and patented the un-submerged diaphragm cell (1897), the stationary furnace for recovery of soda content from black liquor (1913-15), a new method of making calcium arsenate (1925-27), a new acid resisting hydraulic cement (1926-27), a new process of converting sodium sulphate into caustic soda and other chemicals (1923-34), and a new metal filter cloth and a method of making it (1934). In 1929 he designed, built, and operated a 10-effect multiple effect evaporator after investigations in evaporation and separation.

During the World War he was a member of the Chemical Engineering Committee of the Council of National Defense and also of the Division of Chemistry of the National Research Council. His interest in politics led to his membership in the New Hampshire State legislature (1923-24), and in 1930 he was a Republican candidate in the primaries for Governor.

Dr. Moore received the honorary degree, Sc.D., from the University of Maine (1924), the gold medal of the American Institute of Chemical Engineers "for the best contribution to applied science since 1913" (1920), and the Perkin medal of the American Chemical Society in 1925. During 1925-26 he was president of the American Institute of Chemical Engineers. He was a prolific writer on scientific and sociological subjects and his works included *Analysis of the Explosion Process of Recovering Soda Salts from Black Liquor* (1919), *Accident Prevention in the Mill* (1919), *Fundamentals of Electrolytic Diaphragm Cells* (1920), *The Use and Value of Physical and Chemical Constants* (1920), *Scientific Facts about Pure and Impure Milk* (1921), *The Production of Hydrochloric Acid by Direct Union of Hydrogen and Chlorine* (1922), and *Fundamental Principles of Multiple Effect Evaporative Separation* (1923).

MORAL REARMAMENT. A movement carried on by Dr. Frank N. D. Buchman, previously known as the founder of the religious activity called the Oxford Group. Dr. Buchman brought Moral Rearmament before the American public in 1939 by a series of great public meetings that began in May and ended in August.

The purpose of this campaign, expressed by Dr. Buchman as quoted in the *New York Times* of March 10, was to create a "new moral climate" and to carry on a "battle for peace," in the spirit of the Oxford Group. Will H. Hays, speaking at one of the meetings in the course of the campaign, characterized the movement as based on "absolute honesty, unselfishness, love, and purity."

The meetings were of a sort rather to bring about a common state of mind than to advocate a specific course of conduct or a particular plan of moral discipline. The campaign went on for a season closely preceding the apprehended outbreak of war between the German and the British and French Governments. It thus appealed to the feelings of persons strongly impressed with the imminence of a relapse into warfare among leading nations.

A meeting at Madison Square Garden, New York City, May 14, reportedly attended by 12,000, heard messages from Secretary of State Cordell Hull and from Governor Lehman of New York.

The Marquess of Salisbury and several other British speakers of note addressed it by transatlantic telephone. On June 4 a meeting at Constitution Hall in the city of Washington heard from the lips of Senator Truman of Missouri a message from President Roosevelt, declaring that the "underlying strength of the world must consist in the moral fiber of her citizens" and that "a program of moral rearmament cannot fail therefore to lessen the danger of armed conflict." Messages from General Pershing and from a group of members of the House of Commons were also read. In July followed meetings in Hollywood, Del Monte, and San Francisco, Cal.

MORAVIA. See CZECHO-SLOVAKIA.

MORDVA AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

MORMONS. See LATTER-DAY SAINTS; RELIGIOUS ORGANIZATIONS.

MOROCCO. A region of northwestern Africa, divided politically into (1) the French Zone (area, 162,162 sq. miles; population, estimated at 6,430,000 on Dec. 31, 1937), comprising about 85 per cent of the total area and population; (2) the Spanish Zone (area, 13,125 sq. miles; population, estimated at 750,000 on Dec. 31, 1937, including about 44,300 Europeans and 12,900 Jews); and (3) Tangier (q.v.). The 1936 census returns of the French Zone showed 5,875,000 Moslems, 206,500 Europeans and other foreigners, and 161,300 Jews. Populations of the chief cities of the French Zone in 1936 were: Casablanca, 259,000; Marrakech, 191,000; Fez, 144,000; Rabat (capital), 84,000; Meknes, 75,000; Oudjda, 35,000. Estimated populations of the principal towns in the Spanish Zone in 1936 were: Melilla, 64,328; Tetuan (capital), 49,535; Ceuta, 38,945; Alcazar, 30,762; Larache, 29,477. French and Spanish are used as the official and business languages in the French and Spanish Zones, respectively, but the natives speak mainly Moorish-Arabic and the various Berber dialects. Unless otherwise specified, the following statistics refer to the French Zone only.

Production. Agriculture and stock raising are the main occupations. Yields of the principal crops in 1938 were (in metric tons): Wheat, 630,600; barley, 1,085,700; rye, 1100; oats, 47,500; corn, 217,400; olive oil, 8000. The wine yield in 1938 was 778,000 hectoliters (hectoliter equals 26.42 U.S. gal.). The wool clip was about 20,300 metric tons; meat production, about 80,400 metric tons. Output of the chief minerals in 1938 (metal content, in case of ores) was in metric tons: Coal, 123,000; natural phosphates, 1,447,000; manganese ore, 39,000; iron ore, 140,000; lead ore, 17,100; antimony ore, 262; molybdenum ore, 99; zinc ore, 2500; silver, 6.5; gold, 233 kilograms. Yield of sea fisheries, 1938, 30,300 metric tons, valued at 33,300,000 francs. Industries include flour mills, breweries, cement factories, soap works, sardine and tuna canning plants, Moorish handicraft.

The Spanish Zone raises much the same crops as the French Zone, but in limited quantities. Iron ore (782,000 metric tons in 1937), lead and some antimony are exported. Stock raising and tunny fishing are other occupations.

Foreign Trade. Imports in 1938 were 2,126,835,000 francs (1,765,624,000 in 1937); exports, 1,502,262,000 francs (1,143,930,000). Imports from France in 1938 were 733,000,000 francs; exports to France, 676,000,000. For U.S. trade, see IMPORTS AND EXPORTS. Imports into the Spanish

Zone in 1938 were equivalent to about 3,300,000 old U.S. gold dollars; exports, \$1,000,000.

Finance. Budget estimates for 1939 placed receipts at 1,185,054,000 francs (1,102,240,000 in 1938); expenditures, 1,184,958,000 francs (1,102,168,000).

Transportation. In 1938 French Morocco had about 1148 miles of railway line, which carried approximately 420,000,000 ton-kilometers of freight; 4501 miles of roads; and air lines connecting Casablanca with Toulouse (France) and Dakar (French West Africa). In the same year 3352 vessels of 5,640,397 tons entered French Zone ports. In the Spanish Zone there are 72 miles of railway and about 1383 miles of roads.

Government. The Sultan of Morocco, who resides in the French Zone, usually at Rabat, exercises nominal executive authority in both the French and Spanish Zones. But in the French Zone his acts are subject to the approval of the French Resident-General. In the Spanish Zone the Sultan delegates his authority to a Khalifa, named by him from a list of two candidates submitted by the Spanish Government. Actual authority is exercised by the Spanish High Commissioner residing at Tetuan. Sultan in 1939, Sidi Mohammed, proclaimed Nov. 18, 1927. Resident-General and commander-in-chief of the French Zone, Gen. Albert Nogués, appointed Sept. 16, 1936. Spanish High Commissioner, Gen. Carlos Asensio, who succeeded Col. Juan Beigbeder y Atenza on Aug. 16, 1939. Khalifa of Spanish Morocco, Sidi Muley Hassan Ben el Mehedi.

History. With the outbreak of war between France and Germany in September, 1939, General Nogués directed the mobilization of large numbers of native troops in Morocco, Algeria, and Tunisia for service in France and for the defense of the French North African colonies against possible attacks from Italian Libya and Spanish Morocco. Military forces in Spanish Morocco had been greatly strengthened by the return of the Spanish Foreign Legion and Moorish troops that had been engaged in the Spanish civil war. But General Franco's neutrality in the European war temporarily ended danger from the west.

The French authorities in Morocco had been confronted in previous years with a growing nationalist movement, abetted by German and Italian propaganda against French rule. For reasons described elsewhere (see ALGERIA and TUNISIA under *History*), the native Moslem leaders rallied to the French cause in 1939. It remained to be seen, however, whether the French could retain control of tribes in the High Atlas and other interior regions, some of which were conquered as late as 1934. During the World War the French were obliged to withdraw from the mountainous interior to the principal cities and the coastal districts.

MORTGAGES. See AGRICULTURE; FINANCIAL REVIEW; HOME OWNERS LOAN CORPORATION.

MOSLEMS. See AFGHANISTAN, ALBANIA, ALGERIA, ARABIA, CHINA, EGYPT, INDIA, IRAN, IRAQ, MOROCCO, NETHERLANDS INDIES, PALESTINE, TUNISIA, TURKEY.

MOSQUERA NARVAEZ, AURELIO. President of Ecuador, died in Quito, Nov. 17, 1939. Born in 1884, he was educated at the Central University of Quito and entered the practice of medicine. He became widely known in his profession and for 25 years was a professor at the University. One-time Senator in the National Congress, he

subsequently became president of the Liberal Party, and on Dec. 2, 1938 he was elected president of Ecuador by the Constituent Assembly. Two weeks later he dissolved Congress due to its restoration of the rank of general to Luis Larrea Alba, which Mosquera believed to be unconstitutional. Forced to capitulate, he accepted a proposal for an election to be held on Jan. 15, 1939 to elect a new Congress, and that he himself would remain in office only until the new Congress convened on Feb. 1, 1939. However, the new Congress re-elected him president. See ECUADOR under *History*.

Dr. Mosquera Narvaez was an advocate of economic co-operation with the United States.

MOTION PICTURES, United States. The year 1939, celebrated as the fiftieth anniversary of the screen, did not prove an auspicious period in its development. It started with the film industry taking a timid and confused attitude toward production which was only partially relieved by the favorable reception accorded escapist drama and such spectacles as the super-Westerns. It ended on a profound note of pessimism bordering on panic, due to the virtual drying up of foreign markets following the outbreak of European hostilities. The year was marked by the opening of *Gone With the Wind*, the longest and most expensive film ever released; by the great success of historical-action pictures; by the increasing importance of the director in film-making, and by a number of first-rate minor budget offerings.

In the search for escapist material it was inevitable that the Western, or horse opera, formula would be exploited. When this was done by John Ford and Dudley Nichols, director and writer (of film version) respectively of *The Informer*, the result was a piece of fine artistry. Their *Stagecoach* was one of the best films of 1939, even though it fell behind such companion super-Western films as *Jesse James*, *Dodge City*, *Destry Rides Again*, or *Union Pacific* in impressive grosses. It reaffirmed many fundamental principles of the silent cinema in the rhythm of its action, while it demonstrated anew that stars are not needed to make a fine film. Aside from Thomas Mitchell's splendid portrayal of a bibulous doctor, who became a hero in a running skirmish with hostile Indians, the production was definitely a director's film.

While the glorified horse operas composed one pole of escapist screen drama, comedies constituted the other. The most notable of these were marked by excellent dialogue, delicacy of direction, and expert playing. *Ninotchka*, for example proved a good-natured travesty of the U.S.S.R., signaling the famous Ernst Lubitsch "touch" in its staging, demonstrating a great gift for comedy on the part of Greta Garbo, and making capital of comic incident peculiarly suited to screen treatment. Leo McCarey's *Love Affair*, co-starring Charles Boyer and Irene Dunne and Garson Kanin's *Bachelor Mother*, starring Ginger Rogers, worked the same magic with even less plot material, while Gregory La Cava's *Fifth Avenue Girl* was an amiable entertainment in the vein of *My Man Godfrey*.

Translations of novels bulked large in the presentations of 1939. *Gone With the Wind*, with its four hours of running time and its \$4,000,000 cost, set precedents in film-making and started out to break all sorts of box-office records. A faithful adaptation of Margaret Mitchell's best-seller, it was distinguished by fine acting on the part of Clark Gable, Vivien Leigh, and Olivia de Havilland.

land and some impressive Civil War pageantry, although its inordinate size seemed scarcely justified by its dramatic quality. *Goodbye Mr. Chips*, inspired by James Hilton's novel about an English school-master, had more power than its original. Made in England by Metro-Goldwyn-Mayer, like *The Citadel* of the year before, it was brilliantly portrayed by Robert Donat as the gradually aging pedagogue and by Greer Garson as his wife, and was admirably staged by Sam Wood. Best of the other films derived from novels was *Wuthering Heights*, which proved an absorbing and moving treatment of the Emily Brontë classic, acted with restraint and skill by Merle Oberon, Laurence Olivier, and the promising Geraldine Fitzgerald.

What are known as films of social significance were few and far between, although a few noteworthy productions found their way to the screen with something to say. Frank Capra, as producer-director, made a challenging dramatic affirmation of democratic ideals in *Mr. Smith Goes to Washington*, with James Stewart giving a splendid portrayal of a crusading young senator. Although the action was confined in large part to the Senate chamber, Mr. Capra succeeded in achieving fluency and imaginative effects in his direction. *Confessions of a Nazi Spy* was a striking semi-documentary account of Nazi subversive activity in this country. Incidentally it was adjudged the best English-language film of the year by the National Board of Review. In *Juarez*, Maximilian's ill-fated Mexican adventure and the rise of Mexican democracy were given contemporary over-tones in a handsome and thoughtful film, staged by William Dieterle.

The theater continued to supply Hollywood with a variety of entertainments, several of which became resounding successes in the new medium. *Dark Victory*, thanks to an adroit adaptation by Casey Robinson and fine playing by Bette Davis and Miss Fitzgerald, became a far better film than it had proved a play. *The Old Maid*, with Miss Davis again in the leading role, was an extremely popular offering, and Clare Boothe's bitter indictment of her sex, *The Women*, found its way to the screen in a star-studded production, with Joan Crawford, Norma Shearer, and Rosalind Russell vying for chief honors. *On Borrowed Time*, *Idiot's Delight*, and *Golden Boy* were among the other stage plays which were given photoplay contours.

Juvenile stars were responsible for more than one noteworthy production. Mickey Rooney rose to top ranking as a screen actor in the estimation of fans due principally to his portrayals in the Andy Hardy series. In addition he appeared with Judy Garland in an adaptation of the stage musical, *Babes in Arms*, which became one of the big money-makers of 1939. Miss Garland also played the chief role in a lavish but not very imaginative production of *The Wizard of Oz*. Deanna Durbin, meanwhile, moved triumphantly from small girl parts to adolescent roles in *Three Smart Girls Grow Up* and *First Love*.

Aside from those musical films already cited there was little activity in this field of screen production. *The Great Waltz*, which was the most pretentious of the song and dance presentations, turned out to be ponderous and far from popular. At the same time Technicolor, for which there had been great hopes, was not adopted on any large scale, although it was employed in *Gone With the Wind*. It appeared to best advantage in the Max and Dave Fleisher full-length animated cartoon,

Gulliver's Travels, which lacked the imaginative genius of Walt Disney's *Snow White* and the *Seven Dwarfs*, but demonstrated without any question that there was an established place for its peculiar type of screen entertainment.

One of the most encouraging trends of the year was the increasing excellence of small-budget films. While many Class B offerings continued to be slipshod re-makes or carbon copies, several were made with such integrity and taste that they compared favorably with photoplays which cost ten times as much to produce. *Five Came Back*, *The Great Man Votes*, and *U Boat 29* might be especially noted. Documentary films were not much in evidence, although *Crisis* dealing with the rape of Czecho-Slovakia, Joris Ivens's *The 400 Million*, and *The City*, celebrating problems of urban living, were fine examples of their idiom. Meanwhile the documentary technique influenced regular film-making profoundly, not only with *Confessions of a Nazi Spy*, but also with such a straight historical reconstruction as *Stanley and Livingstone*.

The director became increasingly important in motion-picture production during 1939. Often assuming the title and function of associate producer as well, he served notice that individual creative control paid dividends in quality and receipts. The first line directors, such as Frank Capra, John Ford, Ernst Lubitsch, Leo McCarey, Gregory La Cava, Michael Curtiz, Edmund Goulding, George Stevens, Sam Wood, Victor Fleming, and Garson Kanin, invariably turned out films which were commercially as well as artistically successful.

From an economic standpoint the European war was the greatest problem of the year for the industry. With the loss of something like 30 per cent of revenue which foreign markets had supplied, it became evident that curtailment in expenditures and a concentration on the domestic market were in order. It was estimated, however, that weekly attendance for 1939 remained at 85,000,000 and that \$165,000,000 had been spent on productions, which showed no diminution from preceding years. Under unfinished business must be put the Government's threatened anti-trust suit litigation and the Neely anti-block booking measure.

France. The Gallic cinema continued to outrank all other foreign film-making centers in the quality of the offerings sent to this country. The productions represented a wide variety in theme and treatment. Marcel Pagnol's *Harvest* was a simple and moving screen pastoral, relating how the love of a man and woman for each other and for the Provençal soil reclaimed a deserted village. *Port of Shadows*, selected by the National Board of Review as the best foreign-language film of the year, proved a brilliantly staged and acted atmospheric melodrama. Under the brilliant Julien Duvivier's direction, *The End of a Day* took its place among the finest films ever made about the world of the theater. *Rasputin*, with Harry Baur; *Boys School*, and *That They May Live* were other interesting French exhibits.

Germany. Stereotyped photoplays of the romantic and comic variety continued to emerge from the Nazi-controlled industry. With the exception of a few fine performances, there was nothing to distinguish the German offerings exported to the United States.

Great Britain. For the most part English films were disappointing, particularly when compared with the notable offerings of 1938. *Jamaica Inn*, which had Alfred Hitchcock for director and



© United Artists Corporation, Courtesy of Samuel Goldwyn
 Merle Oberon and Laurence Olivier
 in
 "WUTHERING HEIGHTS"



A Selznick International Picture Produced by David O. Selznick. A Metro-Goldwyn-Mayer Release
 Vivien Leigh as Scarlett O'Hara
 in
 "GONE WITH THE WIND"

MOTION PICTURES



Courtesy, Columbia Pictures Corporation

Jean Arthur, James Stewart, and Thomas Mitchell
in a scene from
"MR. SMITH GOES TO WASHINGTON"



Courtesy of the French Cinema Center, Inc.

A Scene From
"HARVEST"

Showing Fernandel (center) the featured player. The sergeant on the right is the French actor Le Vigan

Charles Laughton for star, gave almost no hint of these two fine craftsmen's talents. In the same way, *The Mill on the Floss*, in spite of Geraldine Fitzgerald's artful acting, proved a second-rate offering. Herbert Wilcox's *Nurse Edith Cavell*, starring Anna Neagle, proved a stark historical recreation, but it was a Hollywood project.

U.S.S.R. The crowning achievement of the Soviet cinema for 1939 was Sergei Eisenstein's *Alexander Nevsky*, an account of the first stirrings of nationalism in Russia at the end of the feudal period, masterfully staged by the great director of *Potemkin*. Other Soviet films which deserve mention were *Lenin in 1918*, acted with great skill by the late Boris V. Shchukin, and *Shors*, a further chapter in the Soviet celebration of the 1917 revolution.

Awards. The New York Film Critics selected *Wuthering Heights* as the best English-language film of the year; *Harvest* as the best foreign production. John Ford's direction of *Stagecoach* was cited as the best staging of 1939; James Stewart's portrayal in *Mr. Smith Goes to Washington* as the best male acting; Vivien Leigh's characterization of Scarlett O'Hara in *Gone With the Wind* as the best feminine playing. It was the fourth year that awards were given.

See BUSINESS REVIEW; PHOTOGRAPHY.
HOWARD BARNES.

MOTORBOATING. See SPORTS.

MOTOR TRANSPORTATION. See AUTOMOBILES; INTERSTATE COMMERCE COMMISSION; ROADS AND STREETS.

MOUNTAIN CLIMBING. See EXPLORATION.

MOUNT HOLYOKE COLLEGE. An institution for the higher education of women at South Hadley, Mass., founded in 1837. The registration for the autumn session of 1939 was 1094 in residence, including 57 graduate students, 220 seniors, 225 juniors, 279 sophomores, 308 freshmen, and 5 unclassified students. The faculty numbered 135. The endowment funds amounted to \$5,264,291, and the income for the preceding year, exclusive of gifts, was \$1,209,951. The total amount of gifts and bequests during the year 1938-39 was \$324,729. There are 160,000 volumes in the library. A new dormitory, the gift of Mrs. Emily Abbey Gill of Springfield, was opened in September. President, Roswell Gray Ham, Ph.D., LL.D.

MOZAMBIQUE. mō'zam-bēk' (**PORTUGUESE EAST AFRICA**). A colony in East Africa, consisting of two separate administrative units: (1) The Province of Mozambique (245,773 sq. mi.), comprising seven districts, and (2) the two districts of Manica and Sofala (51,881 sq. mi.), administered by the Mozambique Company under a royal charter expiring in 1941. Total area, 297,654 square miles; total population (1938 estimate), 4,280,000. Lourenço Marques (capital of the Province) had 47,390 inhabitants (1936); Beira (capital of Manica and Sofala), 24,502.

Production and Trade. The chief products are sugar (84,000 short tons, 1938); groundnuts (37,600 metric tons, 1938); maize, cotton, copra, sisal and minerals. In 1938, in old U.S. gold dollars, imports were valued at \$9,900,000 (\$11,400,000 in 1937); exports at \$8,000,000 (\$9,200,000 in 1937).

Communications. In 1937, 2878 vessels aggregating 12,261,041 tons cleared the ports. The

area administered by the government had 1408 miles of state railways (1937), and 17,869 miles of roads (1938).

Government. The budget for 1938 was balanced at 581,839,435 escudos. On Dec. 31, 1937, the public debt amounted to 21,973,003 escudos (escudo averaged \$0.0448 for 1937). The Province of Mozambique (the seven districts, Cape Delgado, Inhambane, Lourenço Marques, Mozambique, Nyasa, Quelimane, and Tete) is administered by a governor-general who is represented in each of the seven districts by a governor. Governor-General, Col. José Pereira Cabral. Governor of Manica and Sofala, Rear Admiral Luis Magalhães Correia. Gen. Antonio Carmona, President of Portugal, arrived at Lourenço Marques, the capital of Mozambique, July 17, 1939, on an inspection of the province. He received tumultuous receptions at the capital and at various other stops throughout his tour. See PORTUGAL under History.

MUNDELEIN. mūn'dē-lin, GEORGE WILLIAM, CARDINAL. An American Roman Catholic prelate, Archbishop of Chicago, died in Mundelein, Ill., Oct. 2, 1939. Born in New York City, July 2, 1872, he was educated in the parochial schools and at Manhattan College (A.B., 1889). Offered an appointment to Annapolis, he refused, and entered St. Vincent's Seminary in Beatty, Pa. An honor student, he was sent to the Urban College of Propaganda in Rome (S.T.D., 1908) where he studied until 1895 when he was ordained in Rome by Bishop McDonnell of Brooklyn, N. Y.

Assigned to the diocese of Brooklyn as Bishop McDonnell's secretary, he was also pastor of the Lithuanian Church. Two years later (1897) he was appointed chancellor of the diocese, and in 1903 was given the special honor of appointment as censor of the Liturgical Academy, Rome, the only American ever so honored. Named a domestic prelate with the title of Right Reverend Monsignor in 1906, in the following year he was made a member of the Ancient Academy of the Arcadia, and on Sept. 21, 1909, was consecrated titular Bishop of Loryma and auxiliary Bishop of Brooklyn. His gifts as an administrator were developed while in Brooklyn where he was pastor of All Saints Church, which he built, a founder of Cathedral College, and an organizer and incorporator of *The Tablet*, the official organ of the diocese.

On Nov. 30, 1915, Bishop Mundelein was appointed Archbishop of the archdiocese of Chicago, and on Mar. 24, 1924, was named the first American Cardinal of the West. Under his administration, the archdiocese expanded and prospered. His fame as an administrator increased and he became known as a builder of churches, schools, convents, hospitals—including Quigley Preparatory Seminary, Misericordia Hospital, and the Lewis Memorial Maternity Hospital. No less famous were his charities. He established a series of homes for working girls, built up the Associated Catholic Charities of Chicago, founded the Mission of the Holy Ghost for the unemployed, and founded the Catholic Big Brother Movement and the Catholic Youth Organization in his archdiocese. Under his patronage, the 28th International Eucharistic Congress was held in Chicago in 1926.

Perhaps the work nearest to the Cardinal's heart was the establishment of the Seminary of St. Mary of the Lake, which he founded at Area, Ill. With the approach of the diamond jubilee of the diocese, he announced plans for the establish-

ment of the Seminary and in October, 1921 it was opened. In 1924, upon his elevation to the Cardinalate, the citizens of Chicago presented him with a check for a million dollars for the Seminary, and in the following year the town was renamed Mundelein in his honor. At the celebration of his silver jubilee in the episcopacy in 1934 it was announced that the Seminary was practically completed, and in 1935 he announced the establishment of a graduate house of studies in Rome.

Not only an outstanding figure in his Church, he was an outstanding American as well. A personal friend of President Franklin D. Roosevelt, he was a frequent supporter of the Administration's work and an advocate of its foreign policy.

MUNICIPAL GOVERNMENT. New York City's second election under proportional representation (PR) gave a city council of 14 Democrats; 2 Republicans; 2 Fusionists; 2 American Laborites; and 1 Independent. Vote counting was completed on the tenth day after the 1939 election and on the 28th day in 1937. Representation is by the boroughs composing the city. In Yonkers, where the first election under the new manager-PR plan was held on November 7, the council of five will consist of two candidates put up by the City Manager League, two Democrats and one Republican.

Proposals to elect councilmen by the PR plan were defeated in New Rochelle and White Plains, N. Y., by large majorities, and in Schenectady, N. Y., by a decisive majority.

A charter for Westchester County, N. Y., centralizing administrative departments under a single executive head and abolishing many features of county government in effect since 1703, was to go into operation on Jan. 1, 1940.

Trenton, N. J., voted 12,600 to 10,900 to give up the council-manager plan after four years' trial and return to the commission plan that had been in use from 1911 to 1935. Trenton was the first of a large number of New Jersey cities to adopt the commission plan, most of which continue to operate under it. Atlantic City, N. J., voted by about 12,000 to 7,000 to adopt the State Civil Service Act.

At Providence, R. I., a vote of 19,411 to 14,082 was cast on November 7 in favor of asking the General Assembly to pass an act amending the city charter "substantially" as proposed by a charter revision commission, created by the legislature earlier in the year. The most significant feature of the proposed new charter is the substitution of a single council composed of two members from each ward for the present two-chamber council. Of four types of city government—commission, city manager, weak mayor and strong mayor—the latter was adopted by the charter commission. Providence is one of the few American cities still having a two-chamber council.

A summary of action of the city manager plan, prior to the election on November 7, as reported in the *National Municipal Review*, follows:—**Adoptions:** Holton, Me.; Barre (town), Castleton, and Ludlow, Vt.; Killingly, Conn.; Abingdon, Va.; Columbia and Johnson, Tenn.; Davison, Mich.; Lake Forest, Ill. (limited powers); Greendale, Wis. (Federal model community); Abilene, Kan.; Fort Collins, Col. **Rejections:** Calais and Gardner, Me.; Waterbury, Conn., with proportional representation (14,276 to 10,513); Sheffield, Ala.; Caney and Tippecanoe City, Ohio; Sioux City, Iowa; Duluth, Minn.; Scotts-

bluff, Neb.; Grand Forks, N. D.; Poplar Bluffs, Mo.; Los Gatos, Calif. **Voted to Retain:** Hardwick and Middlebury, Vt.; Miami Beach, Fla.; Ashtabula, Ohio (3247 to 2110); Wilmette, Ill.; Port Arthur, Texas. **Plan Reinstated:** Knoxville, Tenn., after abolishment in 1937, in both cases by state legislation.

On November 7 the adoption of the city manager plan was defeated at Zanesville, Ohio (6794 to 3394) and at Allegan, Mich. Amendments that would have weakened the plan were defeated at Miami, Fla.

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M. N. BAKER.

MUNICIPAL LEAGUE, NATIONAL. An organization which acts as a central clearing house for current information on improvements in local and State government, founded in 1894 and incorporated in 1923. Its aim is to promote honest, efficient, economical, and responsive local government. Among its committees are those on county government, citizen organization for municipal activity, model State constitution, proportional representation, model City Charter, model fiscal programme, and personnel. The national federation of citizens' councils is a section of the league.

The 45th annual meeting of the league was held in Indianapolis, Ind., Nov. 15-17, 1939. Co-operating in this conference were the Proportional Representation League and the National Association of Civic Secretaries. The officers elected for 1939-40 were: President, Clarence A. Dykstra, Madison, Wis.; vice-presidents, Marquerite M. Wells, Washington, D. C., and Henry L. Shattuck, Boston, Mass.; treasurer, Carl H. Pforzheimer; and secretary and editor of the *National Municipal Review*, Howard P. Jones. Headquarters are at 299 Broadway, New York City.

MUNICIPAL OWNERSHIP. Chief events in the march of public ownership of municipal utilities were in the urban transportation, electric light and power, and water-works fields. New York and Chicago prosecuted rapid transit subway construction. New York virtually completed negotiations for the purchase of the properties of the Interborough (I. R. T.) and the Brooklyn-Manhattan (B. M. T.) systems, including subways, elevated and surface railway, and bus lines. It had long been a partner in subways through having provided capital for construction of early lines. It had also built and was operating and extending the Independent Subway System. When the three systems are unified and operated by the city it will be much the largest municipally owned transportation system in the world.

The Tennessee Valley Authority (TVA)

(q.v.), according to information supplied for the *NEW INTERNATIONAL YEAR BOOK*, was selling electric current to 68 municipalities in November: 46 in Tennessee, 11 in Alabama, 10 in Mississippi, and 1 in North Carolina. Contracts had been made with 6 other cities, 1 of which was in Kentucky. Rural co-operatives, some of which serve small communities, numbered 29. The four largest cities served by TVA are Memphis, Nashville, Chattanooga, and Knoxville. The latter bought the distribution system from the Tennessee Public Service Co. on Sept. 2, 1938, for \$5,329,000. The price included distribution lines in four counties outside the city. For the year ending Aug. 31, 1939, the Knoxville plant made a profit, according to the books of the Knoxville Electric Power & Water Board, of \$258,000, after deducting bond interest, depreciation, and taxes, despite a 40 per cent reduction in rates. All the employees of the company were retained except the manager, whose place was taken by an associate of the firm of consulting engineers who had designed a plant for construction by the city. At Memphis, the city paid the Memphis Power & Light Co., a subsidiary of the Electric Bond & Share Co., about \$12,000,000 for the electric plant and some \$5,000,000 for the gas plant.

The Bonneville Administration, a Federal project beginning service in the Northwest, had contracts in November to supply current to Cascade Locks and Forest Grove, Ore., and public utility districts in three counties in Washington. The voters of San Francisco, at a special election in May, defeated a \$55,000,000 bond issue to buy the private electric distribution system. This is the fourth defeat of the kind. For years the city has generated hydroelectric power as a by-product of its Hetch Hetchy water-supply system and sold the power to the Pacific Gas & Electric Corporation. The annual return has recently been over \$2,000,000.

A summary of ownership of the water works of the United States showed that 13,293 works were publicly and 3424 privately owned, supplying populations (1930 census) of 66,800,000 and 14,300,000 respectively. ("Inventory of Water Supply Facilities," *Engineering News-Record*, Sept. 28, 1939.) A contract between the city of Miami and the Florida Light and Power for the purchase of the Miami Water Co.'s distribution system was made on November 24, the price to be \$5,250,000. A condition of the contract was that the sale be approved at a city election on Jan. 20, 1940. The city already owned the water-supply system, including a large filtration and softening plant. The price to be paid by Newport, R. I., for the works of the Newport Water Corporation, taken over by the city in June, 1936, was fixed during 1939 as a result of appraisal proceedings. See *WATER WORKS AND WATER PURIFICATION*.

Bibliography. Burns & McDonnell Engineering Co., *Results of Municipal Lighting Plants* (Kansas City, Mo.).

M. N. BAKER.

MUNITIONS. See *ARMAMENTS*, *COST OF*; *MILITARY PROGRESS*; *NAVAL PROGRESS*; *NEUTRALITY*.

MURAL PAINTING. See *PAINTING*.

MUSEUMS. See *ART MUSEUMS*; *ARCHITECTURE*.

MUSIC. *General News.* Federal support of music in the United States escaped the fate which had befallen the Federal Theater Project as a re-

sult of the waxing economy sentiment in Congress, but suffered considerable modification as a result of the reclassification measures concerning the Works Projects Administration voted in July. The reclassification, which began September 1, interrupted much of the WPA musical activity early in the fall, but by the end of the year it was announced that sufficient community support had been obtained for continuance of the various art projects at 90 per cent of their former level.

Nikolai Sokoloff resigned as National Director of the Federal Music Project on May 18. His successor was Earl V. Moore, of the University of Michigan, who, under the new arrangement, was named special consultant for the WPA music programs. The general title of Federal Music Project was discontinued and the various local projects were designated by the names of their communities.

An International Musicological Congress, probably the first of its kind to take place in the United States, was held in New York September 11 to 18 under the auspices of the American Musicological Society and the general direction of its president, Dr. Carleton Sprague Smith. Concerts were offered of American chamber music, early and recent, of American folk-music, Latin-American music, medieval music, and of unpublished works of Handel.

A conference on Inter-American musical relations was held in Washington at the Library of Congress October 18 and 19 under the auspices of the State Department's Division of Cultural Relations. A representative group of musicians and educators discussed ways of making the music of either American continent better known in the other.

The seventy-fifth birthday of Richard Strauss, June 11, was widely observed in German-speaking Europe in the spring and early summer, especially in the opera houses. Adolph Hitler went to Vienna for an anniversary performance of *Friedenstag*, and the German Reich Propaganda Ministry established an annual prize of 15,000 marks in Strauss's honor for composers whose works possessed "creative and directive value for the future."

The outbreak of war brought public musical activities to a virtual standstill both in England and France during September. There was a gradual resumption of musical life in the two capitals during the next two months. Both opera houses of Paris had been reopened by the end of November. In London, the noted pianist, Myra Hess, inaugurated on October 10 a series of noonday recitals and chamber music programs at the National Gallery, with a uniform admission price of one shilling. This was regarded as a particularly valuable public and artistic service. Owing to air-raid precaution blackouts, most London events were held in the afternoon, and evening performances began at unusually early hours. Activities in Germany, even in Rhineland cities, were reported to be more or less normal.

In March, Randall Thompson was appointed director of the Curtis Institute of Music in Philadelphia, succeeding Josef Hofmann, who had resigned in September, 1938.

Artists. The American Guild of Musical Artists made a forward step in accomplishing its aim of organizing the relations between artists and managers and producing organizations with the formal announcement, in December, of an agreement between the Guild and the two principal national groups of managements, the Columbia Concerts Corporation and the N.B.C. Artists Service.

This reduced commissions and in other ways modified existing arrangements in favor of the artist. Meanwhile the Guild, in return, undertook to aid managers in disciplining temperamental artists and giving them a greater sense of responsibility in business transactions.

Igor Stravinsky began his longest visit to the United States in September, having accepted the Charles Eliot Norton Professorship of Poetry at Harvard University for the academic year of 1939-40. This chair is awarded annually to a prominent figure in one of the various fields of fine arts. In addition to his lectures in Cambridge, he appeared as guest conductor with the Boston Symphony and other orchestras.

Ignace Jan Paderewski, whose seventy-ninth birthday was November 6, made his twentieth concert tour of the United States, and gave the first of more than 20 scheduled recitals in the National Broadcasting Company's largest New York studio (February 26). After a fortnight's postponement, caused by a cold and an infection which threatened one of his hands, he gave his first program on the road in Detroit (March 15), and carried out his schedule until May 25, when he was to appear in New York at Madison Square Garden. But, already in the hall, he suffered a heart attack, and the audience was dismissed. Having canceled the remaining four dates of the tour, he sailed May 30. Owing to his health, he withdrew from his engagement in the Lucerne Festival in August. During the fall, however, he took part in Polish relief activities and, in January, 1940, was made president of the Polish National Council in Paris.

Marian Anderson, internationally known Negro contralto, became the center of a controversy when her manager, S. Hurok, found that he could not obtain the use of Constitution Hall in Washington for a recital sponsored by Howard University owing to a rule of the owners of the hall, the Daughters of the American Revolution, which did not permit its use by Negroes. Though this policy was in line with regulations in other public places in Washington, calling for separate meeting places for whites and Negroes, it brought forth protests from many prominent persons, including Mrs. Franklin D. Roosevelt, who resigned her D.A.R. membership. A high school auditorium was also unavailable, and, instead of an indoor recital, Miss Anderson gave a free concert on Easter Sunday (April 9) at the Lincoln Memorial in Potomac Park before a huge audience estimated at 75,000, including many government officials.

Another Negro artist, Dorothy Maynor, a young soprano from Norfolk, Va., became a prominent figure in the concert world after she had sung in August at a picnic given by Sergei Koussevitzky for the members of the Boston Symphony Orchestra during the Berkshire Symphonic Festival. In her formal recital debut, in New York on November 19, the unusual qualities of her voice were generally acknowledged, although some critics saw a need for further study.

Mischa Elman, violinist, donated his services for the benefit of German refugees in a three months' concert tour which netted \$41,000 for this cause. Fritz Kreisler, the eminent Austrian violinist, became a French citizen early in April.

Leopold Stokowski, conductor of the Philadelphia Orchestra, made a summer European concert tour which was halted by the onset of the war. A nineteen year old Italian pianist, Arturo Benedetti-Michelangeli, won the first prize in an annual competition in Geneva, and won what was described as

sensational acclaim in autumn recitals in Switzerland and Italy.

Chamber Music. As in 1938, what constituted a virtual chamber music festival took place in the neighborhood of San Francisco, where the Coolidge String Quartet gave nine weekly concerts in July and August as a major musical feature of the Exposition. Mrs. Elizabeth Sprague Coolidge also presented the Roth Quartet in a summer series at Leland Stanford University, while Mills College in Oakland sponsored concerts by the Budapest Quartet with Marcel Maas, Belgian pianist.

There was no formal festival in Washington at the Library of Congress, but several concerts were offered in the winter, spring, and fall by musicians playing the valuable old instruments in the Gertrude Clarke Whittall Collection. In New York the New Friends of Music devoted the latter part of their third season to quartets by Haydn and suites, sonatas, and solo cantatas of Bach. The fourth season of this organization, which plays an important part in the city's chamber music activities, opened October 29 with a repertoire of trios and quintets by Mozart, Beethoven, and Brahms.

The scope of an article such as this does not permit an account of the extensive activities in this field in the regular course of concert events in the United States, or of activities in Europe. In an article in *The Christian Science Monitor* Alfredo Casella commented on a notable recent increase in this musical field in Italy, stating that in that country there are about 100 officially subsidized chamber music societies.

Choral Music and Societies. In connection with the opening of the New York World's Fair, two choruses from Europe made short American spring tours: the Finlandia Chorus, composed of 71 selected Finnish singers under the noted veteran conductor, Heikki Klemetti, and the Royal Norwegian University Chorus under Olav Kjelland's direction. The Yale Glee Club made a summer tour of Europe extending as far as Finland, but the University Glee Club of New York, which had planned to participate in an international song festival in Copenhagen, had to give up the trip.

In New York the Oratorio Society, under Albert Stoessel, remained faithful to its policy of presenting Bach's *Mass in B minor* in the winter and Handel's *Messiah* at Christmastide. In its March concert the Schola Cantorum of New York, under Hugh Ross, prefaced Mozart's *Requiem* with the first performance of two Brazilian works by Burle Marx, *In Memoriam* and *Ave Maria*.

The Dessooff Choirs of New York, under Paul Boepple, introduced to America on April 28 a *Hymnus Symphonius* by Ernst Levy, a Swiss composer who, as founder of the Choeur Philharmonique, had played an important part in a revival of interest in choral music in Paris during the preceding few years.

In Boston Malipiero's *San Francesco d'Assisi* was sung for what was thought to be the first time in America by the Harvard and Radcliffe Glee Clubs in a March concert conducted by Nadia Boulanger. Boston's senior choral organization, the Handel and Haydn Society, revived Berlioz's *The Damnation of Faust* under Thompson Stone's direction March 28. As usual, American choral societies made an almost universal choice of the *Messiah* for their Christmas concerts, although the Mendelssohn Club of Philadelphia chose Bach's *Christmas Oratorio* in its stead.

An important radio choral feature was the Bach cantata series broadcast from Station WOR in

New York under Alfred Wallenstein's direction; this entered its second season in the fall.

Among new French choral works heard during the year were Albert Wolff's *Requiem Mass*, performed in the spring in a Pasdeloup concert under his direction; Jacques de la Presle's *L'Apocalypse de Saint-Sébastien*, presented by the State Radio, and Arthur Honegger's *Jeanne au Bûcher*, with text by Paul Claudel, introduced to Paris with Ida Rubinstein in the title role.

American Festivals. Long-discussed plans to hold a music festival of unprecedented scope in connection with the New York World's Fair were carried forward during the fall of 1938 under the leadership of Olin Downes, music critic of *The New York Times*, who had been appointed director of music by the Fair administration. As announced in December, it was to last six months, beginning with a spring Wagner series by the Metropolitan Opera Association. Opera companies and ballets from Europe, many of the principal American symphony orchestras and well known singers and instrumentalists were to take part.

The Philharmonic-Symphony, which had been named the Fair's official orchestra, devoted the first fortnight of May to national programs under the auspices of foreign official World's Fair commissions. These included two Brazilian concerts under Burle Marx, a Norwegian concert (shared with the Norwegian Royal University Chorus) under Olav Kielland, a Rumanian program under Georges Enesco, a Polish program under Artur Rodzinski, and a Swiss program under Ernest Schelling and Rudolph Ganz. There was no special American program, but works by Samuel Barber and Walter Damrosch preceded Beethoven's Ninth Symphony in the program of May 7 under Mr. Damrosch's leadership. This series was held both in the Hall of Music and in Carnegie Hall. Mr. Enesco conducted the Philadelphia Orchestra in a second Rumanian program at the Metropolitan Opera House May 14.

The Metropolitan Opera's Wagner cycle was held, as announced, between May 2 and 23, including *Lohengrin*, *Die Meistersinger*, *Parsifal*, and the *Ring*, and two performances of *Tristan und Isolde*. The casts included the company's principal German-singing members headed by Kirsten Flagstad and Lauritz Melchior. Choral programs were presented in the Hall of Music by the Finlandia Chorus and the Schubert Choir of Brantford, Ont., and Jan Kiepura, Grace Moore, and Marian Anderson gave recitals. The Takarazuka Theater's troupe from Tokio gave a week's program of Japanese dances and music hall sketches.

Despite the musical interest of the national orchestral programs, which included several works new to the United States, the concerts in the Hall of Music did not pay their way, and, on May 24, the Fair authorities decided to close the formal festival program and substitute entertainment of a more popular sort at lower prices. Mr. Downes submitted his resignation and his department was discontinued.

Two concerts featuring British music by the Philharmonic-Symphony under Sir Adrian Boult, sponsored by the British Council, were held in Carnegie Hall instead of the Hall of Music on June 9 and 10. Three works in these programs, Arnold Bax's *Symphony No. 7*, a piano concerto by Arthur Bliss, with Solomon as the soloist, and Vaughan Williams's *Five Variants on 'Dives and Lazarus'*, had been composed especially for these concerts. The Finnish World's Fair Commission

sponsored a Sibelius program by the NBC Symphony Orchestra under Georg Schneevoigt on September 29. Two early but recently rediscovered tone-poems, *Lemminkäinen in Tuonela* and *Lemminkäinen and the Maids of Sari* were played for the first time in America.

Ambitious preliminary plans had also, if less specifically, been outlined for the Golden Gate Exposition, but for the first few months the music was mainly limited to twice daily concerts by the Goldman Band. The Coolidge Quartet and other chamber music groups gave concerts in the summer. In September, the San Francisco Symphony Orchestra played under José Iturbi, Albert Coates, and Leopold Stokowski, and a concert by Lily Pons with her husband, André Kostelanetz, conducting, drew the largest crowd for any Exposition event for which admission was charged.

The Eastman School of Music held its ninth annual American Music Festival in Rochester, N. Y. (April 24 to 28) under the general direction of Howard Hanson. The programs included first performances of a symphony by Owen Reed, Wynn York's *Night Clouds*, and works for small orchestra by Frank Hruby and Richard Donovan. Ballets were presented with music by Dr. Hanson, Kent Kennan, and Walter Piston. An American music program of festival proportions was held in Baltimore (May 16 to 23) in connection with the twenty-first biennial convention of the National Federation of Music Clubs, with John Warren Erb conducting a massed chorus of 1000. Winners in the Federation's biennial Young Artists' Contest, whose finals were held during the convention, were Martha Lipton, New York, contralto; Samuel Sorin, Detroit, pianist, and Bernard Kundell, New York, and Marian Head, Upper Darby, Pa., who divided the violin prize.

Cincinnati's thirty-third biennial May Festival was held May 2 to 6 with the Cincinnati Symphony Orchestra under Eugene Goossens, a festival chorus of 370, a children's chorus, and 13 soloists, including Mme. Flagstad, taking part. The major choral works performed in the course of the six programs were Haydn's *Creation*, Handel's *Alexander's Feast*, somewhat abridged; part of the oratorio *Watchman, What of the Night?* by James G. Heller of Cincinnati, Mahler's eighth symphony, or *Symphony of a Thousand*, and Stravinsky's *Symphony of Psalms*. Hermann Hans Wetzler's *Magnificat*, new to America, was sung by the children's chorus under Alfred Hartzel. Saint-Saëns's *Samson and Delilah* and acts from *Parsifal* and *Sadko* were sung in concert form.

The Philadelphia Orchestra, under its regular conductor, Eugene Ormandy, the festival director, Earl V. Moore, and Saul Caston again took part in the forty-sixth annual festival in Ann Arbor, Mich., May 10 to 13. Georges Enesco appeared as conductor and violinist and Harl McDonald conducted his *Choral Symphony*. Zoltan Kodaly's *Psalmus Hungaricus* was the other principal choral work in the series, which closed with Verdi's *Otello* in concert form. The thirty-second North Shore Festival at Evanston, Ill., with Frederick Stock and Hans Lange conducting the Chicago Symphony Orchestra, was held in a large tent in the Northwestern University Stadium—an arrangement which was found to be acoustically unsatisfactory. The principal works presented were Bach's *St. Matthew Passion*, Wolf-Ferrari's *The New Life* and Beethoven's ninth symphony.

A new conductor, Ifor Jones, made his debut with the Bach Choir of Bethlehem, Pa., in its

thirty-second Bach Festival (May 19 and 20), making a very favorable impression. Four cantatas, the *Magnificat* and the motet *Come, Jesu, Come* were sung on the first day and the *Mass in B minor*, as usual, on the second. Other Bach festivals were held at Winter Park, Fla., March 2-3; Baldwin-Wallace College, Berea, Ohio, June 9-10, and Carmel, Calif., June 17-23. Ralph Kirkpatrick directed two festival series in April and October at Williamsburg, Va., presenting music of the type heard in the town's heyday as Virginia's colonial capital.

The sixth annual Berkshire Symphonic Festival, which was the second to be held in the Music Shed at Tanglewood, Lenox, Mass., again consisted of six concerts during the first fortnight of August by the Boston Symphony Orchestra under Sergei Koussevitzky's direction. Apart from quasi-novelties such as Walter Piston's *Concerto for Orchestra* and Prokofiev's *Peter and the Wolf*, the programs were mainly conservative.

Albert Stoessel continued as director of the festival at Worcester, Mass., held during the first week of October with Parry's *At a Solemn Musick*, Harl McDonald's *Songs of Conquest*, Brahms's *Song of the Fates* and Horatio Parker's *Hora Novissima* as the principal choral works. The closing evening was again devoted to opera in English, *Pagliacci* and *Gianni Schicchi*.

During the same week, the American Society of Composers, Authors, and Publishers held a festival series of eight free concerts in New York. This included American music of many kinds: operetta and musical comedy, jazz and swing, Negro music, band music, popular songs of the last fifty years, a program for children, and two programs of symphonic music.

In Canada, the Société des Concerts Symphoniques of Montreal sponsored a fourth annual festival at St. Laurent College in the spring. Eugene Ormandy and Charles O'Connell conducted programs including Bach's *Mass in B minor* and *Magnificat*, Beethoven's ninth symphony, and Mozart's *Requiem*.

Foreign Festivals. The London Music Festival, held from April 23 to May 28 with a schedule planned under the direction of Owen Mase, marked a first attempt to co-ordinate the activities of London's principal musical organizations during the capital's social season; to focus attention on the city's musical resources and avoid conflicts of dates. One of the principal features was a series of seven Beethoven programs played by the British Broadcasting Corporation's orchestra under Arturo Toscanini.

The festival amounted to considerably more than an improved arrangement of events which would have taken place anyway; among 27 concerts of a normal character, 17 were specially organized for this series. The program also included three of the operas at Covent Garden, three of those at Sadler's Wells, and nine of those at Glyndebourne. Other special features included a band concert with fireworks, a program of "Ayes and Ales," choral concerts, eight "musical visits" and a trip to Oxford to hear Handel's *Israel in Egypt*.

This was preceded by a "Festival of Music for the People" held early in April under the direction of Alan Bush with a repertoire including an extensive pageant in the Albert Hall, Schönberg's cantata *Peace on Earth*, Benjamin Britten's *Land of Heroes*, part of Mr. Bush's concerto for piano, orchestra and barytone solo, and John Ireland's cantata *These Things Shall Be*.

Members of Arnold Dolmetsch's family, with assisting artists, held their annual festival at Haslemere during the latter part of July, again presenting early music performed on instruments of its period.

Reichsführer Hitler attended the opening performance of the Wagner Festival held at Bayreuth July 23 to August 24. *Der Fliegende Holländer* and *Tristan und Isolde* were performed five times each, *Parsifal* six times, and the *Ring* cycle twice. An Italian conductor, Victor de Sabata, directed *Tristan* with Germaine Lubin, of Paris; as *Isolde*. Otherwise, the casts were mainly German. Other conductors were Heinz Tietjen, who also acted as stage director, Karl Elmendorff, and Franz von Hösclin.

The annual festival at Salzburg extended through August with a repertoire including Strauss's *Der Rosenkavalier*, Verdi's *Falstaff*, Mozart's *Don Giovanni*, *Le Nozze di Figaro*, and *Die Entführung aus dem Serail*, Rossini's "*Il Barbiere di Siviglia*," and Weber's *Der Freischütz*, with Karl Böhm, Hans Knappertsbusch, Clemens Krauss, and Tullio Serafin among the conductors. Casts included German and Italian artists. Molière's *Der Bürger als Edelmann* (*Le Bourgeois Gentilhomme*) was presented with Strauss's music.

The International Society for Contemporary Music held its annual festival April 14 to 21 in Poland. Three programs were held in Cracow, the others in Warsaw.

Florence's fifth "Musical May" Festival, the principal annual Italian event of this kind, extended from April 27 to June 6. The operatic novelty was Vito Frazzi's *Il Re Lear*, produced April 29 under Vittorio Gui. Earlier Italian opera was represented by *Il Trovatore*, Rossini's *William Tell*, Cimarosa's *Le Astuzie Femminili*, edited by Respighi, and Vecchi's *L'Amfiparnaso*, with Gui and Gino Marinuzzi among the conductors. Foreign opera was represented by Ravel's *L'Enfant et les Sortilèges* and Wagner's *Der Fliegende Holländer*, the latter sung by German artists under Karl Elmendorff. Bernardino Molinari and a Roman chorus performed Beethoven's *Symphony No. 9*. Goffredo Petrassi's *Psalm No. 9*, Lorenzo Perosi's *Resurrezione*, and Salviucci's *Alceste*. Victor de Sabata conducted Verdi's *Manzoni Requiem*. Wilhelm Furtwängler conducted the Berlin Philharmonic Orchestra and Chorus in Bach's *St. Matthew Passion*. Two dramas, Grazzini's *La Strega* and Tasso's *Aminta*, the latter with Gluck's music, also received outdoor performances.

Arturo Toscanini again had an important part in the second international festival in August at Lucerne, Switzerland, conducting four symphony concerts with an orchestra of the best Swiss instrumentalists, and two performances of Verdi's *Requiem*. The other orchestral conductors were Sir Adrian Boult, Fritz Busch, and Ernest Ansermet. Adolf Busch served as concertmaster of the orchestra; Bronislaw Huberman, Vladimir Horowitz, Pablo Casals, and Sergei Rachmaninoff appeared as soloists. Other concerts were given by the Strasbourg Cathedral Choir under Abbé Alphonse Hoch's direction, with Joseph Bonnet at the organ; the Adolf Busch Quartet and the Sistine Chapel Choir under Lorenzo Perosi. Mr. Toscanini added one concert to his schedule to replace the originally planned recital by Paderewski; he also took Bruno Walter's place for the concert of August 21.

Despite the German occupation in March, a festival devoted largely to Czech music was held at

Prague under Vaclav Talich's direction early in May, with a repertoire including Smetana's *Libuse* which, owing to its patriotic nature, was banned by the German authorities soon afterwards, and his cycle of tone-poems, *My Country*; Dvorak's *Rusalka*, and Joseph Suk's *Epilogue* for chorus and orchestra.

Opera in America. The Metropolitan Opera House in New York is not owned by the Metropolitan Opera Association, but by the stockholders of the Metropolitan Opera and Real Estate Co., who are the holders of the parterre boxes. According to an arrangement dating from 1893, they lease the opera house rent free to the operating company, and pay annual assessments of \$4500 each for taxes and upkeep. They do not, of course, pay admission prices in addition to the assessment for the use of their boxes, which are their own property.

During the 1938-39 season many of the stockholders, especially those represented by estates, which now held over half the stock, declined to pay the assessments. The Real Estate Co. in July, announced that this left it no longer able to meet taxes and other expenses, and that it was likely that an increasing number of stockholders would wish to end the existing arrangement, liquidate the company, and sell the house after the expiration of the Metropolitan Opera Association's present lease on May 31, 1940.

The proposal of the Metropolitan Opera Association was to take an option on the property, including the nearby warehouse, for the remainder of the term of its lease and to buy it for \$1,970,000, taking over a first mortgage of \$470,000. \$470,000 was to be paid in cash, and the rest in bonds. (This proposal was ratified in January, 1940.)

Like its predecessor, the regular 1938-39 season, which opened with Verdi's *Otello* November 21, was sixteen weeks long. The company revisited Baltimore, Boston, Cleveland, and Rochester between March 13 and April 3, and gave four post-season performances in New York before giving its first performances in New Orleans and Dallas in Easter Week.

Counting the nine performances of the May Wagner series in connection with the World's Fair, the season's grand total of performances, including sixteen opera concerts, was 140 at the Metropolitan and 178 in all, as compared with 139 and 171 in 1937-38. The company increased its Philadelphia performances from eight to ten and also, before the tour, appeared twice in Hartford and once in Newark.

Of the 37 operas performed, nine were by Wagner, who was represented 41 times in the home season, not counting the May series. Verdi was second in order of representation with seven operas and 25 performances, and Puccini a distant third. There were no novelties. Gluck's *Orfeo ed Euridice*, out of the regular repertoire since 1914, had a distinguished new production (November 26) with Kerstin Thorborg as Orpheus. Four works out of the repertoire from nine to fourteen years were revived with renovated scenery and new casts: Verdi's *Falstaff* (December 16), Charpentier's *Louise* (January 28), Massenet's *Thais* (February 10), and Moussorgsky's *Boris Godunoff* (March 7). Lawrence Tibbett, Grace Moore, Helen Jepson, and Ezio Pinza sang the respective title roles. *Boris*, as before, was given in Italian and in Rimsky-Korsakoff's edition of the score, but the hitherto omitted first Polish scene was added.

Verdi's *Simon Boccanegra*, Beethoven's *Fidelio*

and Puccini's *Tosca* with Mr. Tibbett, Kirsten Flagstad, and Maria Caniglia in the respective roles, returned after absences of two or three seasons, and *Mignon* and *Lakmé* after a single season's interim.

Ninety-one singers, three less than in 1937-38, appeared with the company. Three of these sang only in the Sunday concerts. The list of debutants included four Italian sopranos: Maria Caniglia, who, singing Desdemona on the opening night and four other roles, made a moderately favorable impression; Mafalda Favero, who won warm praise in two appearances as Mimi in *La Bohème*; Lina Aimaro, a coloratura with an agile but rather hard voice, and Marisa Morel, formerly of the Salzburg Opera Guild. The four American newcomers were Risé Stevens, a New York mezzo-soprano who showed promise in *Mignon*, *Rosenkavalier* and in Wagner roles; Douglas Beattie, a Californian basso, and the two winners of the 1937-38 radio auditions, John Carter, tenor, and Leonard Warren, barytone.

There were four new foreign tenors, the Italian Gallino Masini and the Swedish Jussi Bjoerling, both well received in short engagements, and Alessio de Paolis and Erich Witte, who proved useful additions for minor Italian and German roles. The Wagnerian wing was reinforced by two experienced German barytones, Herbert Janssen and Hans Hermann Nissen, and by Herbert Alsen, a young German basso.

The 1939-40 season, the 55th in this house and the fifth under Edward Johnson's general management, began its 16 week course November 26 with *Simon Boccanegra*. Wagner's *Der Fliegende Holländer* was revived (December 14), with Mr. Schorr again as the Dutchman and Mme. Flagstad as Senta. Montemezzi's *L'Amore dei Tre Re* was revived (December 27), with Helen Jepson as Fiora; Ponchielli's *La Gioconda* was reinstated (December 30), with Zinka Milanov singing the title role for the first time. The four Americans among the six singers who made Metropolitan debuts before the end of the year were Eyvind La-holm, Wagnerian tenor; Harriet Henders and Annamary Dickey, sopranos, and Mack Harrell, barytone. The other newcomers were Hilde Reggiani, Italian soprano, and Walter Olitzki, barytone, first heard as Beckmesser in *Die Meistersinger* (December 2). Artur Bodanzky's (q.v.) death on November 23 left the 27 year old Erich Leinsdorf in charge of the entire German repertoire. The other regular conductors in an unchanged list were Ettore Panizza, Gennaro Papi, and Wilfred Pelletier. Frank St. Leger was added to the assistant conductors' staff.

As a postlude to its 1938 fall season, the Chicago City Opera presented special performances of *La Bohème* and *Manon* in January with Grace Moore in both title roles. After the death of the general manager, Paul Longone, in the summer, his duties were taken over by the company's president, Jason F. Whitney, for the seven weeks' fall season, which began with a revival of *Boris Godunoff* (October 28), with Ezio Pinza as Boris. Henry G. Weber was appointed musical director. The repertoire of 28 operas, unusually extensive for a relatively short season, consisted mainly of Italian and French works, but four Wagner operas had five performances between November 24 and December 2 with Mme. Flagstad in leading roles and Edwin McArthur conducting. Moniuszko's *Halka* was sung in Polish under Jerzy Bojanowski (December 10), with Jan Kiepura and George Czap-

licki in the cast, and Smetana's *The Bartered Bride* was sung in English.

The 12 singers making their first appearances with the company were Mobley Lushanya, an American Indian, Virginia Haskins, Lucy Monroe, and Renee Trier, sopranos; Karin Branzell and Enid Szantho, contraltos; Kurt Baum, Ernest McChesney, Jan Kiepora, and Manuel Baroumis, tenors, and Robert Campbell Kelso and Frank Chapman, barytones. Carl Alwin, Viennese conductor, made his American debut on November 2. The other conductors, besides Mr. Weber, were Louis Hasselmans, Leo Kopp, and Angelo Canarutto.

Post-season performances of *La Bohème* were held on December 18 and 31, with Mr. Kiepora and his wife, Marta Eggerth, in leading roles on the latter date. A campaign for \$200,000 to meet existing deficits and future expenses followed the regular season. Another seven weeks' season was announced for 1940.

The San Francisco Opera Association lost six Italian artists, who had not been permitted to leave Italy, as well as Deszo Ernster, Hungarian barytone, who was replaced by Alexander Kipnis. Others engaged to replace missing European artists were Dusolina Giannini, Bidu Sayao, and Jarmila Novotna, sopranos, and Marjorie Lawrence, also of the Metropolitan, who sang with the company for the first time. The list of debutants also included two Californian singers, Alice Avakian, soprano, and George Stinson, tenor.

The home season, of 18 performances, ran from October 13 to November 4, with a repertoire of 13 operas and one ballet. Kirsten Flagstad and Lauritz Melchior sang in the three German operas presented, *Die Walküre*, *Tristan und Isolde*, and *Fidelio*. French opera was represented by Massenet's *Manon*; the other choices were from the familiar Italian list. The conductors were Gaetano Merola, general manager of the company; Genaro Papi, Edwin McArthur, and Erich Leinsdorf. Five performances, beginning November 6, were held in Los Angeles. The season's deficit was kept within the guaranteed margin of \$25,000.

The first season of the American Lyric Theater, which, it was hoped, would contribute materially toward widening opportunities for American singers, conductors, dancers, and scenic designers and providing a repertoire for lyric drama on a basis more popular than that of the existing major opera companies, was launched May 18 at the Martin Beck Theater in New York. The repertoire included *The Devil and Daniel Webster*, with text by Stephen Vincent Benét and music by Douglas Moore; *Susanna, Don't You Cry*, with text by Sarah Newmeyer and music by Clarence Loomis based on Stephen Foster tunes, and five ballets presented by the Ballet Caravan.

The Benét-Moore work was regarded as a step in the right direction, and some of the ballets, especially *Billy the Kid*, with music by Aaron Copland, won praise, but *Susanna* was coolly received, and the season closed after 12 performances.

The intermittent course of popular-priced opera at the New York Hippodrome closed in May, and the theater was demolished. The San Carlo Opera Co. came to the Center Theater in September before beginning its annual transcontinental tour. Two operas written for radio had first performances, Gian-Carlo Menotti's *The Old Maid and the Thief*, April 22, by the National Broadcasting Company and Vittorio Giannini's *Blennerhassett*, November 2, by the Columbia Broadcasting System.

The Metropolitan gave its Philadelphian patrons their first opportunity in thirty-four years to hear Wagner's complete *Ring* in its series at the Academy of Music. The Philadelphia Opera Co., organized with a policy of presenting singers living in Philadelphia or its neighborhood in the casts, made its debut with *La Bohème* (January 19), followed by Puccini's Triptych of three operas, in English (March 30). The second season began with *Faust* and *The Marriage of Figaro*, the latter in a new English translation made by the company's conductor, Sylvan Levin. The Philadelphia La Scala Opera Company closed its 1938-39 season ahead of time after the première of Camille de Senes's *Horus* (January 5). Reorganized, it began a 1939-40 season of seven performances with *Butterfly* and *La Traviata*.

The St. Louis Opera Co., conducted by Laszlo Halasz, gave *Die Walküre*, *Otello*, and *Faust* in April and *Aida*, *La Bohème*, Menotti's *Amelia Goes to the Ball*, *Pagliacci*, and *Siegfried* in the fall with several Metropolitan singers in the casts.

Cynthia Parker, by a young Texan composer, Julia Smith, was first performed at the North Texas Teachers' College, Denton, Tex., February 17, with Leonora Corona in the title role. Zoltan Kodaly's *The Spinner* had its first American performance (April 29) in Cleveland by Western Reserve University's music division.

South America's principal opera season at the Teatro Colon in Buenos Aires extended from May 21 to October 21. Two works received world premières, *Las Virgenes del Sol* by the Argentine composer Alfredo Schiuma, and *Biancio* with an Italian libretto by Gustavo Macchi and music by Ettore Panizza, the latter a native of the Argentine capital. Johann Strauss's *Der Zigeunerbaron* had its first performances by this company with Emanuel List as Zsupan. Revivals included Rossini's *La Cenerentola*, Verdi's *Macbeth*, Richard Strauss's *Elektra*, with Rose Pauly in the title role, and Gluck's *Orfeo ed Euridice* with Risé Stevens as Orpheus. The conductors were Mr. Panizza, Ferruccio Calusio, Albert Wolff, and Erich Kleiber.

Opera in Europe. London's spring international opera season in Covent Garden, again seven weeks long, began May 1 with Sir Thomas Beecham as musical director. A projected special feature, canceled on account of the German occupation of Czecho-Slovakia, was a visit by the Prague National Opera. Nevertheless the season opened with a Czech work, Smetana's *Bartered Bride*, sung in German with Hilde Konetzni and Richard Tauber in leading roles. The remainder of the repertoire was shared by works of Wagner—the *Ring* cycle, *Parsifal*, *Tannhäuser*, and *Tristan und Isolde*, and an Italian list including *Turandot*, *Tosca*, *Il Trovatore*, *La Traviata*, *Aida*, *Otello*, and *Don Giovanni*.

The veteran Felix Weingartner made his London debut as an opera conductor in an uncut *Tannhäuser* May 4. Constant Lambert conducted *Turandot*, and Vittorio Gui directed most of the Italian operas. Basil Cameron and Wynn Reeves each took over a performance from Sir Thomas. Among the singers in an international list were Germaine Lubin, Mafalda Favero, Gina Cigna, Eva Turner, Maria Caniglia, Elisabeth Rethberg, and Hilde and Anny Konetzni, sopranos, Kerstin Thorborg, Ebe Stignani, and Gertrude Wettergren, contraltos; Lauritz Melchior, Richard Tauber, Torsten Ralf, Arthur Carron, Jussi Bjoerling, and Beniamino Gigli, tenors; Fritz Krenn, Herbert Janssen,



PIUS XI
261st Pope



WILLIAM BUTLER YEATS
Irish poet



SIGMUND FREUD
Austrian psychologist



GERMÁN BUSCH BECERRA
President of Bolivia



GHAZI I
King of Iraq



GERARDO MACHADO Y MORALES
Cuban politician



JUAN AROSEMENA
President of Panama



JOSEPH A. LYONS
Australian prime minister



SIR HENRY DETERDING
Dutch industrialist



CHARLES HORACE MAYO
American surgeon



HARVEY WILLIAMS CUSHING
American surgeon



WILLIAM J. MAYO
American surgeon

Photographs, Brown Brothers

NECROLOGY



J(AMES) HAMILTON LEWIS
American senator



PIERCE BUTLER
Justice of the U.S. Supreme Court



GEORGE, CARDINAL MUNDELEIN
American Roman Catholic prelate



HEYWOOD BROWN
American columnist



FORD MADDOX FORD
British writer



DOUGLAS FAIRBANKS
American actor



CLAUDE A. SWANSON
American cabinet officer



ANTHONY H. G. FOKKER
Dutch aeronautical engineer



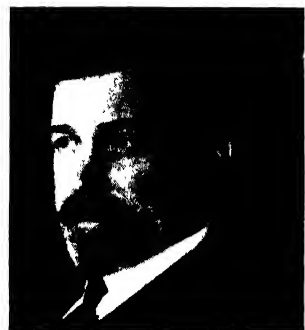
WILLIAM HALLOCK PARK
American bacteriologist



JACOB RUPPERT
American brewer and sportsman



CHARLES M. SCHWAB
American industrialist



HENRY L. DOHERTY
American industrialist

Ludwig Hofmann, Ludwig Weber, Mario Basiola, Armando Borgioli, Emil Treskow, and Ezio Pinza, barytones and bassos.

The sixth season at Glyndebourne, Sussex, ran from June 1 to July 15 with Fritz Busch and Alberto Erede as conductors and Carl Ebert as regisseur. The repertoire included Mozart's *Marriage of Figaro*, *Don Giovanni* and *Così fan tutte* and two non-Mozart works introduced in 1938, Donizetti's *Don Pasquale* and Verdi's *Macbeth*.

Considerable catholicity marked the year's repertoire of London's English opera company at Sadler's Wells, where new productions included those of Rimsky-Korsakoff's *Snow Maiden* early in the winter, Beethoven's *Fidelio* (February 22), Strauss's *Der Rosenkavalier* (March 8), and Ethel Smyth's *The Wreckers* (April 19). Reopening September 30 after the beginning of the war, with one performance a week, the company gradually increased its schedule and gave Verdi's *Otello* (December 12) as the season's first new production, with Joan Cross, John Wright, and Redvers Illewellyn at the principals.

A new plan of operation of the two national opera houses of Paris, the Opéra and the Opéra-Comique, went into effect August 1. Both theaters, formerly subsidized private institutions, were now to be entirely supported by the Government. Jacques Rouché, formerly director of both houses, was named Administrator-General and chairman of the board; Philippe Gaubert becoming artistic director at the Opéra and Henri Busser at the Opéra-Comique. The resources of the two theaters, in repertoire, properties, and personnel, were to be held in common. More state aid was promised for new productions and promising but not yet generally accepted works. Among the new productions at the Opéra were Henri Sauget's *La Chartreuse de Parme*, with Germaine Lubin in a leading role (March 16), Maurice Thirlet's *La Nuit Vénétienne* in April, and Ravel's *L'Enfant et les Sortilèges*, already heard at the Opéra-Comique, in May.

A new work by Wolf-Ferrari, *La Dama Boba*, with a libretto by Mario Ghisalberti based upon a Lope de Vega comedy, was produced in the Teatro della Scala in Milan February 1, under Umberto Berrettoni, with Mafalda Favero in a leading role. The opera was praised for skill and refinement, but was found lacking in color and vital dramatic interest. Pizzetti's first opera, *Fedra*, was revived March 1 under Franco Capuana, in commemoration of the first anniversary of Gabriele d'Annunzio's death. G. F. Ghedini's *Maria d'Alessandria*, first performed at Bergamo in 1937, was introduced to La Scala in April. The 1939-40 season began December 7 with a revival of Rossini's *William Tell* under Gino Marinuzzi.

The first 1938-39 new production at the Royal Opera in Rome was Adriano Lualdi's *La Figlia del Re*. Giuseppe Mulè's *La Zolfara* was first produced under Tullio Serafin (February 25), with the other two works of this composer's *Sicilian Triptych*. The new season began December 9 with Verdi's *Falstaff*. The first novelty was Lodovico Rocca's *Monte Iznor*, with a libretto by Cesare Meano. Guido M. Gatti, writing in *Musical America*, regarded the choruses as the best feature of the music. The San Carlo Opera in Naples staged *Il Malato Immaginario*, based upon Molière, by a young Neapolitan, Jacopi Napoli, in March.

In Berlin, Werner Egk's *Peer Gynt* had its first performance at the Staatsoper in December, 1938. A revival of Mozart's *Die Zauberflöte* under the

talented 30-year-old conductor, Herbert von Karajan, received much praise in January. The original score was used without cuts and the full dialogue restored. In February the Staatsoper produced an officially commissioned work, Rudolf Wagner-Regen's *Die Bürger von Calais*, with text by Caspar Neher. The score, described as unemotional, consisted of eighteen set numbers in classic forms. Marta Fuchs, Ludwig Hofmann, and Tiana Lemnitz sang leading roles, with Karajan conducting. Clemens Krauss conducted the Berlin premières of Strauss's *Friedenstag* and *Daphne* in the spring, and the season's last novelty was Wolf-Ferrari's *La Dama Boba*.

Berlin was also provided with opera by the nationally supported Deutsches Opernhaus and the Volksoper. In Munich, Carl Orff's *Der Mond*, accepted in 1937, was produced February 5 under Krauss. Official influence was thought to be responsible for some changes and cuts. An American work, Florence Wickham's *Rosalind*, had its German première in Dresden in the winter season. Three Italian operas had first German productions in three other cities, Malipiero's *Giulio Cesare* and *Antonio e Cleopatra* being staged in March in Gera and Bremen, while Mulè's *Dafni* was presented in Düsseldorf. The first world première at the Vienna Staatsoper since the German annexation was that of Rudolf Wille's *Königsballade* on February 2. By this time this theater had been placed on a firm financial footing by the state.

Despite the German occupation, the Czech Opera in Prague continued its activities. To replace its smaller house, the old Ständetheater, it leased the Variety Theater in Karlin in the fall. Zurich's Opera, which gave *Friedenstag* for the first time outside of Germany in March, closed its season with the usual festival series, including Strauss's *Salome*, with the composer conducting, and *Rosenkavalier*, a Swiss work, Othmar Schoeck's *Penthesilea*, and a Wagner series with Kirsten Flagstad, Karin Branzell, Germaine Lubin, Max Lorenz, and Joel Berglund among the principals.

Harald André succeeded Jon Forsell in the spring as general director of the Royal Opera in Stockholm. The first fall novelty was Erich Korngold's *Kathrin*, which had originally been scheduled for a production in Vienna but was banned there on political grounds.

Orchestras in America. The principal American orchestra organized primarily for broadcasting, the N.B.C. Symphony Orchestra, continued under the general direction of Arturo Toscanini, who completed his second season, of 16 concerts, on February 25. Guest conductors for the season's remaining Saturday night broadcasts from New York were Hans Wilhelm Steinberg, Bruno Walter, Hans Lange, and Alberto Erede.

A Sunday series of shorter programs was held from May through September. Six of Mr. Toscanini's eight concerts in the fall, were devoted to Beethoven's music. The only novelty was *Night* by the 83-year-old American composer, Templeton Strong. Desiré Defauw, of Brussels, making his American debut, conducted the remaining December concerts.

Except for three composers directing their own works and for Nadia Boulanger, who shared a special concert with Mr. Barbirolli, Georges Enesco was the Philharmonic-Symphony Orchestra's only 1939 guest conductor, from January 26 to February 5. His *Suite Villageoise* had its first performance (February 2), when two Rumanian works, Mihalovici's *Capriccio Roumain* and part

of Sabin Dragoi's *Suite Rustique*, were heard for the first time in this country. Two works by pupils of Mlle. Boulanger, Jean Françaix's piano concerto, with the composer as soloist, and an overture by Antoni Szalowski, had their American premières (February 11).

Two works chosen in the Philharmonic-Symphony Society's 1938 competition, David Van Vactor's first symphony, in D, which had won the principal prize, and Robert L. Sanders's *Little Symphony in G* were introduced under their composers' direction on January 19 and February 26. Arthur Bliss conducted the first American performance of music from his ballet *Checkmate* (November 16). Mr. Barbirolli conducted the world premières of Eugene Bonner's *White Nights* (April 2), Otto Cesana's *Three Moods* (April 22), Jaromir Weinberger's variations and fugue on *Under the Spreading Chestnut Tree* (October 12) in the first concert of the 98th season, and Mario Castelnuovo-Tedesco's second piano concerto, played by the composer (November 2). His overture to *Twelfth Night* was introduced to America in this concert. Fritz Kreisler gave the first performance of his revised version of Tchaikovsky's violin concerto, December 7. Rudolph Ganz took over the young people's concerts after Ernest Schelling's death in December.

Among special programmatic features were Rossini's *Petite Messe Solennelle*, performed with the Westminster Choir, April 5, 6, 9, and Act II of Wagner's *Tristan und Isolde*, performed in full for the first time in New York, April 13, 14, 16. During the fortnight beginning November 20, the Philharmonic-Symphony made its first extensive tour in 10 years, going as far west as Chicago and into Canada.

The training orchestra of the National Orchestral Association of New York, under Leon Barzin, included several new or unfamiliar works in its programs. The orchestra of the New Friends of Music, organized in 1938 under Fritz Stiedry's direction, gave seven Haydn symphonies hitherto unknown to New York in a Bach-Haydn series opening February 26. The Haydn works had been discovered and edited by Alfred Einstein.

The guest conductors who shared the Boston Symphony's season were Mr. Enesco, whose January programs included the American première of Dino Lipatti's *Chef cu lautari*; Ernest Bloch in his own music in March, and Igor Stravinsky early in December. David Stanley Smith conducted the world première of his fourth symphony April 14, and Howard Hanson's third symphony had its first concert performance under its composer, November 3. Roy Harris's third symphony, regarded as one of the year's most noteworthy American contributions, was introduced by Dr. Koussevitzky (February 24). Other novelties included Jakobus Langendoen's *Improvisations* (January 20), Harl McDonald's *San Juan Capistrano* (October 30), and Nicolai Lopatnikoff's second symphony (December 22), all world premières, and Jacques Ibert's *Chamber Concertino* for saxophone, with Sigurd Rascher as soloist (October 13). William Schuman's *American Festival Overture* was first performed in one of Dr. Koussevitzky's pre-season American programs in October. A few concerts were led by the orchestra's concertmaster and assistant conductor, Richard Burgin.

Eugene Ormandy conducted most of the Philadelphia Orchestra's regular concerts. Leopold Stokowski took charge for three weeks in March and April and two in November, when he rearranged

the seating of the orchestra, placing the strings at the rear and the wind instruments at the front. Some critics regarded the advantages of the new seating as non-proven. The other conductors were Saul Caston, Vladimir Golschmann, and Mlle. Boulanger. Paul Hindemith conducted his suite, *Nobilissima Visione*, from his ballet, *St. Francis* (April 14-15). Alexander Gretchaninoff's fifth symphony was first played in a youth concert under Mr. Stokowski (April 5). The year's last concerts (December 29-30) brought the American premières of Alexander Tansman's viola concerto, with Samuel Lifschey as soloist, and Eugen Zador's ballet suite, *The Machine Man*. Three programs of music by Sergei Rachmaninoff were presented in New York in November and December, with the composer as pianist and conductor.

Novelties played by the National Symphony of Washington included Paul Nordoff's second piano concerto, with the composer as soloist (February 12), Haydn's recently discovered 46th symphony, in B, and Karol Rathaus's *Uriel Acosta*, both new to America (October 29).

A Beethoven cycle was a feature of the Pittsburgh Symphony Orchestra's winter concerts. In October, the orchestra was awarded a \$50,000 grant from the Buhl Foundation to be used for free concerts in the city's high schools.

On October 12, Frederick Stock began his 35th season as the Chicago Symphony Orchestra's conductor. Hans Lange, associate conductor, directed several programs. Ernst Krenek appeared as pianist and conductor in his own works on January 26-27, and Percy Grainger appeared in a similar capacity December 12. Works played for the first time were Felix Borowski's third symphony (March 9), Frederick Jacobi's violin concerto (March 14) with Albert Spalding as soloist, and Edwin S. Stringham's *Nocturne No. 2* (March 30). Works played for the first time in America were Bela Bartok's second piano concerto, with Storm Bull as soloist (March 2), Michael Brusselmans's *Suite after the Caprices of Paganini* (October 12), and Victor Babin's concerto for two pianos (November 23) with the composer and his wife, Vitya Vronsky, as soloists.

New works introduced by the Rochester, N. Y. Philharmonic Orchestra under José Iturbi included Carmine Coppola's *Danse Pagane*, Paul White's *Lake Spray*, and an Argentine composition, Floro Ugarte's second suite, *De mi tierra*.

The principal new work introduced by the Cleveland Orchestra was William Walton's violin concerto, written for Jascha Heifetz, who was the soloist in the first performances (December 7-9). Rudolph Ringwall, associate conductor, had charge of several concerts in the regular series, as well as of the popular Sunday and children's concerts and broadcast programs. In Cincinnati, Mr. Goossens introduced to America Manuel Rosenthal's symphonic suite, *Joan of Arc*, and Benjamin Britten's *Variations on a Theme* by Frank Bridge. Carlos Chavez, of Mexico City, conducted a pair of St. Louis Symphony concerts in March.

The Los Angeles Philharmonic, going on a cash-and-carry basis in the fall, with the extent of the season depending on the size of the guaranty fund, scheduled nine pairs of concerts, fewer than in 1938-39, for the new season. To replace Otto Klemperer, away on a leave of absence for recovery from an operation, the 1939-40 concerts were assigned to guest conductors, beginning with Bruno Walter for the first two pairs. Novelties presented in the winter and spring included Ger-

ald Strang's *Intermezzo* (February 9), Joseph Achron's third violin concerto, with the composer as soloist (March 31), and Ernst Toch's suite, *Idle Stroller* (April 21).

The San Francisco Symphony Orchestra's regular series in the War Memorial Opera House was again supplemented by a municipally sponsored series in the Exposition Auditorium. Werner Janssen resigned from the conductorship of the municipally supported Baltimore Symphony Orchestra after the 1938-39 season, and was succeeded by Howard Barlow, of the Columbia Broadcasting System.

The 21st season of New York's Stadium Concerts was 10 weeks long, instead of the usual eight, with 14 conductors directing the Philharmonic-Symphony Orchestra. The 10th Philadelphia summer series in Robin Hood Dell, again eight weeks long, had an attendance better by over 50 per cent than that of the 1938 season. The Chicago Symphony Orchestra gave 24 concerts under Boult, Golschmann, and Rodzinski in six weeks at Ravinia, Ill. and the National Symphony gave semi-weekly concerts at the Water Gate in Washington. California's annual series at the Hollywood Bowl extended from July 7 to September 1 with Monteux, Albert Coates, Rodzinski, and Otto Klemperer as the conductors. Opera and ballet were also presented in all or nearly all of these series, except at Ravinia. Chicago also had an ambitious summer season of free programs of orchestra, band, and other music sponsored by the Chicago Park District and Chicago Federation of Musicians. The soloist attracting the largest audiences in several of these outdoor series was the Metropolitan Opera soprano, Lily Pons, with her husband, André Kostelanetz, conducting.

Orchestras Elsewhere. In Canada, Sir Ernest MacMillan continued at the head of the Toronto Symphony Orchestra, with Hans Kindler, and Georges Enesco, as guests. Reginald Stewart again directed the weekly summer Promenade Concerts. Montreal had two orchestras, Les Concerts Symphoniques, and the Montreal Symphony under Douglas Clarke. Carlos Chavez conducted the National Symphony Orchestra of Mexico City in a 12 weeks' summer season, with Monteux and Klemperer as guest leaders. Massimo Freccia, a Florentine conductor who had taken part in two New York Stadium seasons, began his first season with the Havana Philharmonic in the fall. Albert Wolff and Erich Kleiber were among the conductors of the regular symphony concerts in the Teatro Colon in Buenos Aires.

No foreign orchestras visited London in the winter or spring, but the city was well supplied by its three principal regular organizations, the BBC Symphony under Sir Adrian Boult, the London Philharmonic under Sir Thomas Beecham, and the London Symphony Orchestra under various leaders, including Stanley Chappell, Charles Hambourg, and Felix Weingartner, who, like Bruno Walter, appeared with more than one orchestra.

Among the principal works introduced to England were Jean Françaix's *Le Jugement du Feu* (Courtald-Sargent series, in February), Sir Hamilton Harty's *The Children of Lir* (BBC, March 1); Ernest Bloch's violin concerto (LPO, March 9, with Joseph Szigeti as soloist), Francis Poulenc's piano concerto (LPO, in March), Weingartner's *Sinfonietta* for violin, viola, and cello (LPO, February 23), and Jaromir Weinberger's *Under the Spreading Chestnut Tree* (LPO, December 9). John Ireland's concerto for strings,

Marcel Delannoy's violin concerto and two songs with orchestra by Benjamin Britten were introduced by Sir Henry Wood to London in the curtailed August Promenade Concerts.

The first of the Paris orchestras to resume activities after the war's opening weeks was the Conservatoire, which began its season in November under Charles Münch. The places of players on military services were filled from the suspended Paris Philharmonic. The Colonne and Lamoureux Orchestras, which had both lost men on account of mobilization, combined for concerts at the Châtelet under Paul Paray. After his release from military service, Albert Wolff resumed his concerts with the Pasdeloup Orchestra.

The Berlin Philharmonic Orchestra, canceling its projected trips to England and France, limited its winter and spring tours to the expanded Reich and neighboring countries. Wilhelm Furtwängler continued as its regular conductor. Other German leaders who shared its schedule were Eugen Jochum, Hans Knappertsbusch, Karl Schuricht, Karl Böhm; foreign guests included Hidemaro Konoye, Victor de Sabata, Paul Paray, and Willem Mengelberg. The Berlin State Opera Orchestra revived its Sunday concerts with Karl Elmendorff, Robert Heger, and Johannes Schüller leading the spring series. The Vienna Philharmonic Orchestra, which had lost 10 players owing to Aryanizing laws after the 1938 Anschluss, gained about 20 musicians for the 1938-39 season, and thus could continue to fill its regular duties at the Staatsoper and make tours without enlisting outside aid. Furtwängler, Oswald Kabasta, and Mengelberg were among the winter's guest conductors.

According to Alfredo Casella, writing in *The Christian Science Monitor*, the Italian orchestras of the first rank were the symphony orchestras of the Accademia di Santa Cecilia in Rome under Bernardino Molinari, of Florence under Stabile, of Naples and of Bologna, and the radio orchestras of Rome and Turin. The Santa Cecilia Orchestra, which presented summer concerts in addition to its regular season, gave a piano concerto by Goffredo Petrassi, with Walter Gieseking as soloist, as one of its first autumn novelties. The usual spring series, after the opera season, was held at La Scala in Milan, and Venice had a spring series of seven concerts.

Prague began its fall season with two orchestras, the Czech Philharmonic under Vaclav Talich, Rafael Kubelik, and Karel Sejna, and the German Art Orchestra under Hermann Abendroth. Several new Dutch works were introduced by the Amsterdam Concertgebouw and other orchestras of Holland. Roger Vuataz's second Suite on Swiss Folk Themes was the first new work to be presented during the 1939-40 season by the Orchestra de la Suisse Romande of Geneva under Ernest Ansermet.

The Palestine Symphony Orchestra's third season was shared by Eugen Szenkar, Issay Dobrowen, Malcolm Sargent and Hermann Scherchen, and closed with a Beethoven and Bach festival. Mr. Sargent and Georg Szell both conducted Australian orchestras during the winter season in that continent.

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MUTUAL ASSISTANCE PACTS. See ESTONIA, FINLAND, FRANCE, GERMANY, GREAT BRITAIN, ITALY, LATVIA, LITHUANIA, POLAND, TURKEY, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*; BALKAN ENTENTE; BAL-TIC ENTENTE.

NAGORNO-KARABAKH AUTONOMOUS REGION. See AZERBAIJAN SOVIET SOCIALIST REPUBLIC.

NAISMITH, JAMES A. An American teacher of physical education and inventor of the game of basketball, died in Lawrence, Kans., Nov. 28, 1939. Born in Almonte, Ont., Nov. 6, 1861, he was educated at McGill University (A.B., 1887), at the Y.M.C.A. College, Springfield, Mass. (1891; M.P.E., 1910), and at the University of Colorado (M.D., 1898). Upon graduation, he became director of physical education at McGill and also studied

for the ministry at Presbyterian College, Montreal. With the belief that he could do more good in Y.M.C.A. work, he entered their college in Springfield in 1890 and, in addition, acted as director of physical education there. Subsequently he was physical director at the Y.M.C.A. in Denver, Colorado (1895-98), and at the University of Kansas thereafter. He was retired as professor emeritus in 1937.

In 1891, while at the Y.M.C.A. College, Naismith devised a game which was called basketball and on December 21 of that year the new game was first played. For a description of the game, see *NEW INTERNATIONAL ENCYCLOPEDIA*, VOL. II, p. 745. In 1891 he issued *Basket Ball Rules*. In 1936 Dr. Naismith attended the Olympic Games held in Berlin to witness the Olympic debut of his game. At the time of his death the game had more than 18,000,000 players.

During the World War, Dr. Naismith served in France with the Y.M.C.A. for a year and a half. He was honorary president of the Basketball Coaches Association and honorary chairman and honorary life member of the Basketball Rules Committee. He was the author of the section on athletics in *The Modern High School* (1911), and of *The Basis of Clean Living* (1918).

NAKHICHEVAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See AZERBAIJAN SOVIET SOCIALIST REPUBLIC.

NARCOTICS, BUREAU OF. See NARCOTICS CONTROL.

NARCOTICS CONTROL. International.

The principal progress in the control of narcotics has been made through the League of Nations. The League's Permanent Central Opium Board met in April. A summary of the decade's statistics of morphine and its principal derivatives shows that the manufacture of all those drugs liable to dangerous abuse—morphine (unconverted), diacetylmorphine, and cocaine—fell in the early years; and during the last few years of the decade it has been more or less stable. On the other hand, the manufacture of less dangerous drugs—codeine and ethylmorphine—has shown a tendency to rise. Thus it may be claimed that the efforts of Governments, the Board, and other international bodies have not only reduced the legitimate manufacture to medical and scientific requirements, but, within that manufacture, have also been successful in restricting those substances which present the greatest danger. The most striking fact is a heavy increase in stocks of morphine and codeine—probably due to the fear of war. One other point deserves special mention. For some time, the Board has been gravely concerned at the situation in Macao. At its request, the Prime Minister of Portugal instituted an inquiry.

On May 10, Turkey ratified the 1936 convention for the suppression of illicit traffic in drugs, being the tenth ratification it brought the convention into force.

The Advisory Committee on Traffic in Opium and Other Dangerous Drugs held its 24th session at Geneva from May 15 to June 12. Victor Hoo Chi-tsai of China reported that the Japanese were transporting opium in warships and army trucks, resulting in a large increase of opium imports into Japanese controlled areas of China. He said that Japan expects to obtain 300,000,000 Chinese dollars profit from narcotics sales in conquered China.

The Advisory Committee learned that the

Health Committee having considered the report of the Permanent Committee of the Office International D'Hygiene Publique noted that desomorphine is liable to produce addiction and informed the Council of the League of Nations of this fact and recommended that the provision of the Geneva Opium Convention of 1925 shall be applied to desomorphine. The Advisory Committee decided therefor that desomorphine came automatically within the scheme of Article 11 of the convention of 1931.

Stuart Fuller, who represents the United States on the Committee declared Washington was greatly concerned by the extent of shipments of raw Iranian opium and smoking opium from Macao, Portuguese colony on the Chinese coast, because much of the opium smuggled into the United States is Iranian and is known to come from China.

The Advisory Committee discussed whether an addict is a criminal or an invalid, that is, whether he should be treated by nurses or by police-medical control. Opposing the resolution, proposed jointly by the Swiss and Polish representatives, calling on the various governments to study this subject, Harry J. Anslinger, U.S. Narcotics Commissioner, declared that the adoption of such a resolution would throw the problem back to where it was twenty years ago. Mr. Anslinger added that the experience of the United States showed that the Harrison Narcotics Law—for police control—had contributed to the reduction of addiction and that no ambulatory method could succeed in doing more than increase the number of addicts. He pointed out that addicts will not come forward voluntarily because addiction was regarded as a vice. Only about 10 per cent of addicts could be brought under the control of dispensaries and these would promptly become peddlers for the other 90 per cent, thus serving to spread the habit. Mr. Anslinger cited three cases in which doctors had treated addicts with morphine; in each case the doctors prescribed, in the course of a year, more morphine than all the other medical men in their respective areas and an increase in crime.

Colonel C. H. L. Sharman of Canada supported Mr. Anslinger's argument, but Dr. Witold Chodzko of Poland argued that conditions in Europe differed from those in the United States.

United States. The 1939 report of Harry J. Anslinger, Commissioner of Narcotics, showed increased vigilance in halting prospective supplies of narcotic drugs before their entry into the United States. Seizures made by the Bureau of Customs, in some cases in conjunction with the Coast Guard, at ports and borders aggregated 902 seizures and 26,675 oz. in the year ended June 30, 1939, as compared with 638 seizures and 5278 oz. in the 1938 period. Seizures from internal traffic dropped from 4354 oz. in 1938 to 3907 oz. in 1939.

The largest raw opium seizure of the year was made at New York City with Coast Guard aid, in January, when 123 lb. of gum were taken in five five-gallon olive-oil tins just after the contraband was unloaded from the Italian steamship *Ida*. The Bureau also co-operated with the French and British governments in seizing and imprisoning Isaac Leifer for attempting to smuggle into the United States heroin concealed in the bindings of Hebrew prayer books.

Destruction of marihuana crops in co-operation with other State and Federal agencies aggregated

approximately 7436 tons and an area of 6506 acres. Bulk marihuana seizures at ports and borders reached 2291 oz. in 1939. Total seizures for 1939 were 17,074 oz. of bulk marihuana and 17,825 cigarettes, as compared with 19,673 oz. and 17,894 cigarettes in 1938.

Arrests for narcotic drug law violations showed little change, with 3295 during 1939 as against 3013 in 1938. There continues to be a scarcity of crude and smoking opium, as well as morphine, while heroin continues to be the principal drug of addiction. Most of the heroin seized is highly adulterated.

The Division of Mental Hygiene of the Public Health Service (q.v.) continued study of the treatment of addicts on its two narcotic farms (Fort Worth, Tex., and Lexington, Ky.), and of the results of the new United States narcotic drug regulations. Studies of new opium derivatives, supposed to have the analgesic properties of morphine, without its addiction liability, so far show that they have no advantages over morphine.

B. P. ADAMS.

NATAL. See SOUTH AFRICA, UNION OF.
NATIONAL AIR RACES. See AERONAUTICS.

NATIONAL ASSOCIATIONS AND SOCIETIES. For a detailed treatment of various scientific and other organizations, whose official titles begin with the word National, see under the important descriptive work of the title, except in the case of Government organizations, as the NATIONAL PARK SERVICE.

NATIONAL AUTOMOBILE SHOW. See AUTOMOBILES.

NATIONAL BAPTIST CONVENTION. See BAPTISTS.

NATIONAL DEFENSE. See UNITED STATES; MILITARY PROGRESS; NAVAL PROGRESS.
NATIONAL EMERGENCY COUNCIL. See GOVERNMENT REPORTS, OFFICE OF.

NATIONAL FIRE PROTECTION ASSOCIATION. See FIRE PROTECTION.

NATIONAL GALLERY OF ART. See ART MUSEUMS.

NATIONAL GUARD. See MILITARY PROGRESS.

NATIONAL HEALTH PROGRAM. See MEDICINE AND SURGERY.

NATIONAL INCOME. See BUSINESS REVIEW.

NATIONAL LABOR RELATIONS BOARD (NLRB). The past fiscal year of the National Labor Relations Board was characterized by a steady growth of collective bargaining contracts and an increasing resort to Board procedure rather than to organizational strikes.

The increase of written trade agreements tells the story of the accomplishments of the Board and its positive effect in reducing industrial strife. This development, experienced in all industries, was particularly noticeable in the mass production industries. Before 1937 there were almost no agreements in the iron and steel industry, but by 1938 the number had increased to 500, covering three-fourths of the industry. By contrast, less than 100 rubber workers were covered by agreement in 1932 while now there are more than 40,000; more than 80 per cent of this coverage was effected since the Supreme Court decisions of April, 1937, validating the National Labor Relations Act.

In considering the effect of Board activities

upon strikes during fiscal 1939, it is necessary to note that the Act does not intend to give the Board jurisdiction over all strikes, but only those strikes called for organizational purposes. In these cases workers increased their use of Board facilities rather than the strike technique. During 1936 the number of strikes exceeded the number of Board cases by 33 per cent. In 1937, the figures were reversed; Board cases exceeded strikes by 121 per cent. The trend continued in 1938, when the number of cases became 276 per cent greater than the number of strikes. For 1939, the ratio increased and Board cases exceeded organizational strikes by 319 per cent.

The activities of the Board for the fourth fiscal year, ended June 30, 1939, are best understood by examining separately the data which pertain to the Board's two distinct functions, those of preventing unfair labor practices, and of aiding in the free choice of employee representatives. During the year, the Board disposed of 6569 cases involving over a million workers. Of the entire number, 4230 cases involved charges of unfair labor practices, while 2339 were representation cases.

In the 4230 unfair labor practice cases the Board closed over 90 per cent before the first step in the Board's formal procedure, a complaint, was issued. These cases were disposed of by settlement between the parties, by dismissal of the charges filed by the labor organization after an agent of the Board had made full investigation, or by union withdrawal of the charges after it had ascertained the true situation, or had been properly advised by the Board's agent.

During the fiscal year, the Board disposed of 2339 representation cases involving 584,853 workers. It certified a collective bargaining agency for 44,622 workers in 112 cases without an election. It held 746 secret ballot elections. Four hundred and eighty-one of these, or 64 per cent, were held with the consent of all parties involved. The remaining 265 elections were conducted pursuant to Board order. Of the 207,597 workers eligible to participate in these elections, 181,090 cast their ballots. The fact that nearly 88 per cent of the eligible voters cast their ballots has been welcomed as an indication of the workers' keen interest in unions of their own choosing, and as an approval by them of the democratic device of the secret ballot.

Scrupulous as it has been in the administration of the Act's objectives of encouraging and protecting the processes of genuine collective bargaining, the Board has been harrassed by the schism in the ranks of organized labor. Today not only must the Board determine whether one of two particular competing unions represents a majority of the workers in any plant, but it must also reconcile the conflicting claims as to whether the unit most appropriate to effectuate the purposes of the Act will be a craft unit or the larger industrial unit. The protection of the primary objective of the Act—the right of employees to bargain with the employer—is often rendered difficult by a determination of secondary problems produced by rivalry between the American Federation of Labor and Congress of Industrial Organizations.

During the fiscal year, the Board decided 116 representation cases in which the two unions were competing. In only 43 cases the two groups disagreed as to the appropriate bargaining unit. In 16 of the 43 cases the American Federation of

Labor's contention was upheld; the Congress of Industrial Organization in 19 cases; in 7 cases the contentions of each were upheld; and in one case no decision was necessary. It is to be expected that the union whose contentions were rejected would criticize the decision. The changing desires of the unions themselves, however, show that Congress acted wisely in leaving for the Board the determination of the proper bargaining unit. For example, the American Federation of Labor, self-characterized as traditionally craft-conscious, during the last fiscal year requested of the Board some form of industrial unit in approximately 113 cases, and a craft form in only 68 cases.

The formal orders of the Board constitute about 15 per cent of its work. It is, however, within this area that court litigation falls. A total of 43 decisions were rendered during the fiscal year by the various Circuit Courts of Appeals and by the Supreme Court of the United States; they concerned principally the enforcement or review of Board orders in unfair labor cases. In addition, the year was marked by a great increase in the settlement of cases through the entry of decrees in the Circuit Courts of Appeals with the consent of the parties. One hundred and forty-seven such decrees were entered as compared with the 11 entered in the preceding year.

The Board was involved in 12 cases before the United States Supreme Court during the fiscal year. Six of these were cases in which application was made for a writ to review a lower court decision favorable to the Board. In five of the six, the Supreme Court declined to review the decision, leaving in force the Circuit Court of Appeals' favorable decision. In the six cases in which an opinion was rendered, the Board was fully sustained in two, its order modified in two others, and set aside in the remaining two.

Out of the 38 decisions rendered by the Circuit Courts of Appeals, the Board's orders were enforced in full in 12 cases, modified in 17 instances, and set aside in the remaining 9. Of the latter 9 cases, in one the Circuit Court of Appeals was subsequently reversed and in another its decision was modified by the Supreme Court.

In the past year a number of issues of great importance to the administration of the Act were ruled on by the Supreme Court. The Board's jurisdiction over a public utility which operates entirely within one State was upheld by the Supreme Court in *Consolidated Edison Co. v. National Labor Relations Board*. The court pointed out that the effect of a labor dispute among the company's employees, disrupting service of electrical energy to railroad, telephone, and radio companies, would be nothing less than "a catastrophe" to interstate commerce.

In *Fansteel Metallurgical Corporation v. N.L.R.B.*, the Supreme Court, after upholding an order of the Board based upon violations of the Act respecting the company's intimidatory conduct and promotion of a company-dominated union, held that the Board exceeded its discretion in remedying the situation by ordering the reinstatement of persons who had engaged in a sit-down strike.

In the *Ford Motor Co.* case, the Supreme Court ruled that the Circuit Court of Appeals may properly exercise its discretion in sending a case back to the Board for further proceedings before a final order is entered by the Board.

The Supreme Court held that there is no breach of the statutory duty to bargain collectively with the representatives of the company's em-

ployees in the absence of a request for such bargaining, in *N.L.R.B. v. Columbian Enameling and Stamping Co.*

In substance, the Supreme Court held in three cases involving Board decisions that the supporting evidence should be "substantial evidence" such as "a reasonable mind might accept as adequate to support a conclusion," or which "affords a substantial basis of fact from which the fact in issue" might be "reasonably inferred." (*Consolidated Edison, Columbian Enameling, and Sands Mfg. Co.*)

In general, the cases decided by the Circuit Courts of Appeals, in addition to principles already established by prior decisions, have sustained the Board's position in holding that affiliated corporations may be parties in a case charging unfair labor practices committed by any one of them. They have also upheld the Board's contentions that in order to make the disestablishment of a company-dominated union complete, the Board may require the company to cease giving effect to any contract which has been entered into with such organization; that the employer is required to send individual notifications to employees setting aside individual contracts that have been signed under pressure by the employer; and that closed-shop contracts with minority unions may be invalidated. As to Board decisions requiring the companies to take affirmative action, the courts have enforced orders requiring the payment of back pay to the personal representative of a deceased employee; and those necessitating reinstatement of employees even though the employer removes his plant to a new location, or finds it necessary to dismiss those currently employed to make room for the men reinstated by the Board's order. See UNITED STATES under *Legislative Investigations*; COURTS, FEDERAL; SUPREME COURT; LABOR CONDITIONS.

J. WARREN MADDEN.

NATIONAL PARK SERVICE. Conservation of the country's national parks, national monuments, and allied recreational areas for the use and enjoyment of present as well as future generations is the major objective of the National Park Service, established as a bureau of the U.S. Department of the Interior by Act of Congress dated Aug. 25, 1916. From that date to the present time the number of areas under the Service's jurisdiction has increased from 37 to 155, constituting a vast Federal Park System of approximately 20,800,000 acres. These areas are classified as follows: 25 national parks (9,536,374.73 acres); 4 national historical parks (7,642.27 acres); 80 national monuments (9,519,998.78 acres); 11 national military parks (20,977.31 acres); 7 national battlefield sites (2,147.60 acres); 4 national historic sites (223.59 acres); 1 national recreational area (1,699,573 acres); 8 national memorials (317.11 acres); 11 national cemeteries (355.03 acres); 3 national parkways (30,749.50 acres); and the system of national capital parks in and adjacent to the District of Columbia (6,008.66 acres).

During the last travel season (Oct. 1, 1938–Sept. 30, 1939) these areas, preserved and maintained for the benefit and enjoyment of all, attracted 15,454,367 visitors.

The following units were added to the Federal Park System during 1939: Homestead National Monument, Nebr.; Badlands National Monument, S. Dak.; Santa Rosa Island National Monument,

Fla., Tuzigoot National Monument, Ariz., Federal Hall Memorial National Historic Site, New York, N. Y., Old Philadelphia Custom House National Historic Site, Pa., and two national parkways now being constructed by the National Park Service—the Blue Ridge National Parkway, which, when completed, will connect Shenandoah and Great Smoky Mountains National Parks, and the Natchez Trace National Parkway which will connect historic Natchez, Miss. and Nashville, Tenn.

Further expansion of the Federal Park System resulted from addition of lands to existing national parks and monuments, notable among which was the enlargement of Carlsbad Caverns National Park, N. Mex., from 10,080 to 49,568 acres and Glacier Bay National Monument, Alaska, from 1,134,720 to 2,299,520 acres. Important, though small, was the addition to Colonial National Historical Park, Va., of a 100-acre plot of land at Cape Henry on which stands a cross marking the site of the first landing of English colonists on American soil on Apr. 26, 1607.

Legislation enacted during 1939 changed the status of three of the historical units under the jurisdiction of the National Park Service: Areas formerly known as the Abraham Lincoln National Park, Ky., and the Chalmette Monument and Grounds National Battlefield Site, La., were classified as national historical parks, and Fort McHenry National Park, Md., was designated as the Fort McHenry National Monument and Historic Shrine.

Under President Roosevelt's Government Reorganization Plan the Branch of Buildings Management was transferred to the Federal Works Agency. Other outstanding National Park Service developments during 1939 included the acquisition of lands along the historic Chesapeake and Ohio Canal and restoration of a 22-mile section connecting Georgetown, D. C., with Seneca, Md.; continuation of a Park, Parkway, and Recreational-Area Study carried on by the Service in co-operation with various States under authority of the Act of Congress of June 23, 1936; initiation of construction, under Service supervision, of a memorial to Thomas Jefferson in West Potomac Park, Washington, D. C.; acquisition of lands in connection with the Jefferson National Expansion Memorial Project, St. Louis, Mo.; completion of a hotel at McKinley Park Station, Alaska; and erection of a Regional Headquarters Building in Santa Fe, N. Mex.

ARNO B. CAMMERER.

NATIONAL PLANNING. See **PLANNING**.
NATIONAL RESOURCES PLANNING BOARD. Under President Roosevelt's Reorganization Plan, effective July 1, 1939, the functions of the National Resources Committee were consolidated with the functions of the Federal Employment Stabilization Office under the name of the National Resources Planning Board in the Executive Office of the President. The functions of the Board are:

1. To collect, prepare, and make available to the President such plans, data, and information as may be helpful to a planned development and use of national resources, and related subjects referred to it by the President, and to recommend to the President and the Congress long-time plans and programs for the wise use and fullest development of such resources.
2. To advise the President from time to time of the trend of employment and business activity, and of the existence or approach of periods of business depression and unemployment in the United States or in any substantial portion thereof; and to recom-

mend measures leading to the improvement and stabilization of economic conditions.

3. To collect information concerning advance construction plans and estimates by all Federal agencies, the States, municipalities, and other public and private agencies, and to list for the President and the Congress all proposed public works in the order of their relative importance with respect to (a) the greatest good to the greatest number of people, (b) the emergency necessities of the Nation, and (c) the social, economic, and cultural advancement of the people of the United States.
4. To receive and record all proposed Federal projects involving the acquisition of land (including transfer of land jurisdiction) and land-research projects, and, in an advisory capacity, to provide the agencies concerned with such information or data as may be pertinent to the projects.
5. To consult and co-operate with agencies of the Federal Government, with the States and municipalities or agencies thereof, and with any public or private planning or research agencies or institutions, in carrying out any of its duties and functions, and to act as a clearing house and means of co-ordination for planning activities, linking together various levels and fields of planning.

These responsibilities and functions do not differ radically from those entrusted to the Board's immediate predecessor, the National Resources Committee.

The National Resources Planning Board is contributing to the planning movement by active encouragement of planning activities. A technical committee has considered ways of stimulating planning in local communities. The creation of State planning boards has been encouraged with such success that they are now operating in 45 of the 48 States. A number of regional planning agencies have been established with the Board's assistance, such as the Pacific Northwest, New England, Northern Great Lakes, and Northern Great Plains regional planning commissions or agencies. The Board maintains regional planning offices or "centers" of its own in nine regions covering the entire country. Only where it cannot discover or secure the creation of necessary planning activities, or where those activities need to be tied together, does it develop its own machinery for long-range planning of our national resources.

The Board has also made large contributions in the field of research towards filling in planning gaps. Its industrial research includes studies on national income, consumption habits, the structure of our industrial economy, patterns of resource use, housing, etc. Its Advisory Committee on Science has made long-range surveys of population, technological trends, and the Nation's research resources, both public and private. An extensive study of urban problems has been completed by its Committee on Urbanism. Nationwide studies of land and water problems have been made. At the request of the President, a basic survey has been made of our energy resources with a view to establishing a national policy for their conservation and use and of the relief problem.

Through its technical committees the National Resources Planning Board acts as a clearing-house and a correlator for overlapping planning activities. All of these activities of the Board head up in its advisory function. It reports its findings to the President and the Congress and makes recommendations as to long-range programs for the conservation and full development of our natural and social heritage. It makes suggestions to the President and to administrative establishments as to policy proposals and the planning of national policy. It assists the Presi-

dent, as requested, in developing public policies that are co-ordinated both among the various agencies administering them and with other broad programs of the Administration.

CHARLES W. ELIOT 2ND.

NATIONAL YOUTH ADMINISTRATION (NYA). The National Youth Administration was established through Executive Order on June 26, 1935, within the Works Progress Administration; but on July 1, 1939 the first Reorganization Plan placed it under the Federal Security Agency. Since its inception, the National Youth Administration has been allocated approximately \$335,000,000 and has employed on the average over 500,000 young men and women a year. During the current year, operating on a budget of \$100,000,000, it will employ as many as 785,000 young people—500,000 students and 285,000 out-of-school youth. See EDUCATION.

The National Youth Administration's Student Work Program is providing jobs to financially-handicapped students from 16 to 24 years of age. The students are selected by the school and college authorities on the basis of need and scholarship. They are then assigned to such jobs as the repair of classroom furniture, library and laboratory assistance, research work, and improvement of campuses or school grounds. For this work the students receive a regular monthly wage based on the prevailing hourly rate for the type of job they perform. The wage for secondary school students—of whom there were 302,400 in November, 1939—varies between a minimum of three dollars and a maximum of six dollars a month. The wage for the 118,000 college students runs from ten dollars up to twenty dollars a month. And the wage for the 2900 graduate students varies from twenty dollars to thirty dollars. All told, the Student Work Program was employing 423,300 students in November, 1939.

The Out-of-School Work Program furnishes employment to unemployed youth who are outside the school system and who are certified as in need. About 90 per cent of these youth who become NYA workers have either had no work experience or merely the experience obtained from jobs calling for little or no skill. NYA work projects are therefore planned by local officials and sponsors with two major aims in mind: First, the filling of community needs; and, second, the provision to youth of an opportunity to acquire good work habits and certain skills that are basic to a general occupational field.

During December, 1939, there were 285,000 out-of-school youth working on NYA projects. The young men were constructing small school houses, school bus shelters, and ski jumps. They were improving public parks and laying out public playgrounds. Over 10 thousand young men and women were assisting in the field of recreational leadership. Another seven thousand were engaged in public health and hospital work. More than 26 thousand boys were employed in work shops turning out such useful articles as furniture and recreational equipment. And about 18 thousand girls were working on sewing projects making clothing for distribution to needy families and public institutions.

In a somewhat special category are the young men and women employed at the 600 NYA resident centers, of whom there were 28,000 in December. Housed in or near such institutions as agricultural and mechanical schools, teachers' col-

leges and hospitals, these youth are participating in a well-integrated program of study and work. Half the day is spent in the classroom, the other half day is spent putting this newly-acquired knowledge into practice. The young people attend these centers for periods of from three to six months.

Finally, under the NYA Guidance and Placement Program, thousands of youth are being provided with the information necessary to insure an intelligent selection of a job. This information is conveyed through occupational and industrial studies, job-information classes, and radio broadcasts. In addition, NYA placement counselors, working in co-operation with State Employment Services in 149 cities, have registered 620,000 young people and have found jobs in private employment for 260,000.

AUBREY WILLIAMS.

NATURAL GAS. See GAS.

NATURALIZATION. See IMMIGRATION AND EMIGRATION.

NAURU, nā'ōō-rōō. An atoll in the Pacific (166°E longitude and 26 miles south of the equator), mandated (1920) to Great Britain, Australia, and New Zealand by the League of Nations. Area, 8.43 square miles; population (Apr. 1, 1937), 3097, including 194 Europeans. The principal industry is the mining of phosphate (855,000 metric tons exported in 1938). In 1938 general imports were valued at \$400,000 in old U.S. gold dollars; exports (including a small amount of copra) at \$1,000,000. There is a wireless station on the island. In 1937, 107 vessels (514,960 gross tons) entered and cleared. Revenue (1937) amounted to £53,343 (Australian pounds); expenditure, £29,312.

By special agreement among Great Britain, New Zealand, and Australia, the latter exercises sole administrative authority over the island. Administrator, Lt. Col. F. R. Chalmers (appointed October, 1938).

NAVAL ACTIONS. See EUROPEAN WAR.

NAVAL PROGRESS. Continuation of armed conflicts in various parts of the world and recurring crises brought ever-increasing expenditures for naval armaments, not only by the great naval powers but by the smaller ones as well. When the European War commenced in the late summer, further marked increases in programs occurred and building was accelerated. The lesser powers concentrated their efforts largely on submarines and high-speed torpedo-motorboats, and to some extent on destroyers. The imminence of a general war, and finally the war itself also prompted such countries to increase their own facilities for building and repairing men-of-war. Formerly they had relied on the large nations for their naval construction, but Turkey, Rumania, Yugoslavia, Brazil, and other countries made real progress in developing shipyards, drydocks, and attendant heavy industries.

The large powers gave precedence in building yards to naval construction, increased the number of ways, and opened additional yards. No particular type was emphasized—battleships, aircraft carriers, cruisers, destroyers, submarines, torpedo-motorboats, and auxiliaries and small craft were all being pushed to completion. The increases incident to outbreak of war, however, were more marked in the types susceptible of the most rapid construction. Germany, for instance, had speeded up production of submarines to two or three per

week; while Great Britain was turning out minor war vessels such as the *Blackswan* (1250 tons—8 ft. draft—19 knots—eight 4-inch AA guns) for escort duty at a great rate. America, Italy, and other neutrals, in the world of rapidly changing conditions and alliances, were as active as the belligerents in building up their navies. It was to be noted that although some 35 capital ships were under construction the insistent demand for cruisers and smaller craft was being met without slowing down the work on the heavy vessels.

The aircraft carrier, like the battleship, had survived a period of doubt and unpopularity and was very much in favor again despite the fact

that the type had been but little tested in war. Italy alone of the great powers, with her peculiar geographical position, found no use for such vessels, considering them a costly and vulnerable type. The considerable expansion in naval air forces was generally in carrier-borne and shore-based aircraft. The increase in numbers carried in other ships was slight. Despite the difficulty of operating aircraft in the open sea, however, provision was made in nearly all new construction of battleships and cruisers for a certain number. The U.S. Navy, having much greater sea areas to cover than other powers, continued to provide for more catapult units on her vessels than was

COMPARATIVE DATA—THE GREAT NAVAL POWERS—AS OF JULY 1, 1939

	Commissioned and under age		Total built		Building and appropriated for as far as known		Grand total	
	No.	Thousands of tons	No.	Thousands of tons	No.	Thousands of tons	No.	Thousands of tons
United States:								
Capital Ships	14	438	15	464	8	300	23	764
Aircraft Carriers	5	120	5	120	2	35	7	155
Cruisers (8" guns)	17	161	17	161	1	10	18	171
Cruisers (6" guns)	17	138	17	138	8	60	25	198
Destroyers	54	84	221	273	43	68	264	341
Submarines	22	34	89	83	25	35	114	118
Total	129	975	364	1239	87	508	451	1747
British Empire:								
Capital Ships	15	475	15	475	9	335	24	810
Aircraft Carriers	7	128	9	149	7	138	16	287
Cruisers (8" guns)	15	146	15	146	..	..	15	146
Cruisers (6" guns)	24	186	47	295	25	147	72	442
Destroyers	107	154	178	233	37	37	215	270
Submarines	45	52	55	57	18	16	73	73
Total	213	1141	319	1355	96	673	415	2028
Japan: *								
Capital Ships	10	301	10	301	3	121	13	422
Aircraft Carriers	11	147	11	147	2	25	13	172
Cruisers (8" guns)	12	108	12	108	..	..	12	108
Cruisers (6" guns)	15	98	23	133	5	44	28	177
Destroyers	87	114	123	149	17	20	140	169
Submarines	40	59	59	77	3	6	62	83
Total	175	827	238	915	30	216	268	1131
France:								
Capital Ships	7	164	7	164	4	140	11	304
Aircraft Carriers	2	32	2	32	2	36	4	68
Cruisers (8" guns)	7	70	7	70	..	..	7	70
Cruisers (6" guns)	11	80	11	80	3	24	14	104
Destroyers	70	120	71	121	30	47	101	168
Submarines	75	73	75	73	27	24	102	97
Total	172	539	173	540	66	271	239	811
Italy:								
Capital Ships	4	95	4	95	4	140	8	235
Aircraft Carriers . . . . .	..	..	..	..	..	..	..	..
Cruisers (8" guns)	7	70	7	70	..	..	7	70
Cruisers (6" guns)	12	74	14	81	14	56	28	137
Destroyers	100	112	130	133	12	15	142	148
Submarines	98	77	105	80	28	31	133	111
Total	221	428	260	459	58	242	318	701
Germany:								
Capital Ships	5	82	7	108	4	150	11	258
Aircraft Carriers . . . . .	..	..	..	..	2	39	2	39
Cruisers (8" guns)	2	20	2	20	3	30	5	50
Cruisers (6" guns)	6	36	6	36	4	28	10	64
Destroyers	32	49	44	51	40	36	84	87
Submarines	50	20	50	20	21	12	71	32
Total	95	207	109	235	74	295	183	530
U.S.S.R. (Russia): *								
Capital Ships	3	70	..	..	..	..	..	..
Aircraft Carriers . . . . .	..	..	..	..	..	..	..	..
Cruisers (8" guns)	1	8	..	..	2	17	..	..
Cruisers (6" guns)	3	17	2	12	8	23	..	..
Destroyers	21	26	14	16	..	..	..	..
Submarines	114	60	8	4	19	12	..	..
Total—Data are too incomplete to give totals.								

* As Japan releases no data officially the information may be incomplete, particularly as to "building and appropriated for."

* Data available as to the U.S.S.R. is known to be incomplete, but figures given are considered to be reliable minimums.

generally found on similar foreign ships. An extreme case was the *Brooklyn* cruiser-class with accommodations for eight, although only four were normally carried in peace. Five Russian destroyers could operate a small seaplane each, and one Italian submarine was fitted to carry one, but those were isolated instances.

The years of effort, commencing in 1922, to bring about limitation of naval armaments had served for a time as some check on construction of men-of-war, but when Japan denounced the treaties to which she was a party and they terminated in December 1936, little restraint by treaty remained. The last vestige of such restraint was removed in 1939 when the escape clauses of the London treaty were invoked and all obligations thereunder were suspended. The new war brought opportunity to test the ships that had been built against such a contingency.

For a description of the naval operations (including the "Allied Blockade," "Submarine Warfare," "Shipping Losses," "Naval Actions and Losses," "Sinking of *Graf Spee*") of the European countries at war, which commenced early in September, 1939, see the section entitled *The War at Sea* (p. 242) of the article on EUROPEAN WAR.

Naval Strength of Great Powers. Exact figures of naval strength of important powers were guarded closely as the year drew to a close. The table on page 522 gives reliable information as of July 1, 1939.

Argentina. The naval program noted in 1926 anticipated an expenditure of 75,000,000 gold pesos to be apportioned over ten years. It is invariable that programs planned over such a long period undergo many alterations in the course of their execution. This one was no exception but with the entrance of the cruiser *La Argentina* into service, the program was finished except for three submarines that were not ordered until late in 1938. Five destroyers, in addition to the seven of the *Corrientes* class recently completed, were projected. Four 1000-ton escort vessels were being built at Rio Santiago for seagoing training at the Naval School; only the *Murature* was nearing completion. The Navy Department accelerated her training courses at the Naval Academy, and adopted a new plan of recruiting, evidently with a view of increasing the personnel of 500 officers and 11,000 men.

Brazil. Six minelayers were building at the government yard at Islas das Cobras, Rio; at least two, the *Cananea* and *Carloca* were launched. These vessels of 550 tons were designed for 14 knots, to carry 50 mines and two 4-inch guns. Despite the demands of the British armament program on the shipbuilding program steady progress was made on the six destroyers being built in England. Several, including the *Juruena* and the *Javaray*, were launched. As these vessels were prototypes of the British *Hero* class, it seemed probable that on completion they might be incorporated into the British Navy for war service instead of being delivered to Brazil. Meantime arrangements were being made to build three larger destroyers in Brazil, using machinery and fabricated parts from the United States.

Chile. The naval budget for 1939 was nearly 300 million pesos, about 8 per cent over the preceding year. The Department of Defense continued to make inquiries and to conduct negotiations regarding replacements for the old cruisers *Blanco Encalada* and *General O'Higgins* as well as for some smaller vessels. A naval mission was sent to

Europe to further the project, but no contracts were announced. Two defense units were being built at Valdivia (South Chile) to replace the *Leucoton* and *Aguila* that had previously been lost at sea.

Colombia. An American naval mission was secured to assist in the training and rehabilitation of the fleet the primary units of which were two destroyers built in Lisbon of English design and materials and under supervision of English technicians. Interest was stimulated, and education facilitated by visits from American men-of-war including a division of heavy cruisers.

Denmark. The Navy budget was increased 4½ million kroner over the preceding year and further funds were made available for accumulating strategic war materials. The authorities emphasized anew that the preservation of Danish neutrality was the primary function of the navy. The five-year building program was pushed and in February two 700-ton destroyers (in lieu of smaller ones originally planned) were begun in Copenhagen. The submarine *Havkalen*, 400 tons, was placed in service and a fourth of the same class was soon to follow. The minelayer *Lindormen*, 150 mines, was nearing completion.

Naval aviation, directly under the Commander-in-Chief of Maritime Defense, was composed of bases at Avnoe, Ringsted, and Copenhagen, an aviation school, one squadron of patrol planes, one of fighters, and one of torpedo planes.

Egypt. The scheme for naval and military reorganization and rearmament announced in 1938 made scant progress, probably because of lack of funds. The general plan was changed somewhat, so that the principal units would be mostly minelayers and minesweepers. An English officer was to act as naval adviser and the personnel was to be trained in part in England.

Finland. The navy consisted of two 4000-ton coast defense ships carrying 10-inch guns, completed in 1933; 5 small modern submarines; 4 gunboats; several minelayers, minesweepers, ice-breakers, etc. The naval authorities announced a long-range building plan to include 3 armored ships, 6 destroyers, 9 submarines, 9 motor torpedo boats, and several minelayers and minesweepers, but the country became engaged in war with Russia before effective steps were taken to commence this construction.

France. The labor troubles that had retarded French naval construction for several years were settled and strenuous efforts were made to recover lost ground. The interest in anti-submarine measures may be judged from the fact that 27 patrol gunboats, 25 submarine-chasers, and 30 motor torpedo-boats were under construction when war was declared. The total of such ships in commission at the time was but 36. On her own account France had 75 submarines built and 27 building or projected.

A short while prior to the war and apparently in preparation therefor and allegedly in conformity with an understanding with the British, the naval forces were reorganized with a strong striking force at Brest, consisting of the 2 new battleships, 3 new light cruisers, 8 of the largest and best destroyers, and 20 submarines. At L'Orient were 2 old battleships, a light cruiser, a minelayer, and numerous minesweepers and torpedo craft. The great portion of France's splendid cruisers and destroyers were at Toulon where they were supported by 3 old battleships.

On June 15, 1939, the 2000-ton submarine *Phé-*

nia was lost when it dived in deep water and did not emerge from Cam-Ranh Bay, 225 miles north-east of Saigon, French Indo-China. The loss of the 5000-ton minelayer *Latour d'Auvergne* by fire and explosion off Casa Blanca on September 12 revived the seaman's superstition that it is bad luck to change the name of a ship.

A large program for improvement of naval bases was being carried out. The world's largest dry dock, 1198 feet by 118 with 55 feet over the sill, was a part of the construction work at Brest. Toulon, Dakar, and Agadir received attention, but the greatest efforts were at Oran and Mers-el Kebir. Those two places on the same bay in Algeria, separated by only four miles, were part of the same project. The accomplishments of the year included arrival of a 35,000-ton floating dry-dock, completion of a 2000-yard section of break-water, filling large underground fuel reservoirs, installation of anti-aircraft batteries, creation of a seaplane base at Arzeu, 20 miles away, and much other important work.

Germany. As war approached, Germany threw a cloud of secrecy about her building activities, but evidence already indicated plans for extensive expansion of submarine construction to augment the force of 50 built and 21 building in July. The claim of the Ministry of Propaganda in December that the output in December had reached one per day was gross exaggeration. Even the more reliable reports of two to three per week caused informed persons to question the ability of Germany to produce skilled crews to operate that number. An indication of one phase of naval warfare to be expected from Germany might have been taken from the fact that her submarines could lay mines, that she had twelve minelayers built, and that there were persistent reports of aircraft-minelayers. As the war developed, great damage to shipping in British coastal waters resulted from mines, planted by submarines and aircraft. They were usually laid at night, and were of a new type that rested on the bottom instead of floating and were thus undisturbed by conventional sweeping methods. The popular term "magnetic mine" was a misnomer, but with some basis of fact. A delicate firing mechanism was actuated by the fluctuations of an electric current (within the mine) caused by passage of the metal hull of a ship over the mine.

The German surface Navy, though small, evinced no intention of being held in port by its powerful adversaries. The *Graf Spee* operated in the South Atlantic until sunk in December. The *Deutschland* was repeatedly reported as being out; and she sunk the auxiliary cruiser *Rawalpindi* off Iceland. Cruisers and destroyers roamed the Baltic and the Scandinavian coast despite the hazards. The general policy of the German Navy appeared to be to make occasional raids on the high seas, to harass commerce in the North Sea, to drive off enemy ships entering the German bight, and to safeguard communications with Scandinavia.

Great Britain. With memories of the successes of submarines in the last war, and the ultimate effects of blockade on the German economic structure still fresh in mind, the British built and planned for early and effective operations against the one, and for early and intense application of the other. In addition to the ships built and building listed in the foregoing table, Great Britain commenced the war with no fewer than 250 minor war vessels and she had 60 others building. These

included minesweepers, patrol gunboats or escort vessels, trawlers, motor torpedo-boats, net-layers, etc. Parliament and the people supported the Admiralty in its efforts to prepare for the coming war. The naval estimates issued in March called for \$750,000,000, more than \$110,000,000 in excess of the amount the year before. The estimates were later increased by supplementary ones. The new construction program adopted called for 2 battle-ships, a carrier, 4 large cruisers (6-inch guns), 16 destroyers, 20 escort vessels, 10 minesweepers, a fast minelayer, and a number of minor vessels. An interesting provision was that for converting the *Cairo* and *Calcutta* and possibly other ships of the same class into antiaircraft ships. Thirteen of those cruisers were completed about the end of the last war. In 1935 or 1936 two were reconstructed and rearmed with 10 4-inch A.A. guns, and numerous machine guns. For a time, the idea found little favor, and the project for further conversions was suspended.

When Great Britain commenced her rearmament program four years before, informed circles were aware that one of the greatest obstacles was the difficulty in obtaining guns, mounts, and fire-control apparatus. Within that time the productive capacity of the country increased five times over that of 1935 for guns, and nine times for control gear.

On June 1, 1939, the new submarine *Thetis* was lost while undergoing acceptance trials in Liverpool Bay, England. After diving the submarine failed to surface at the time intended. Four men were saved by means of the Davis escape apparatus, the other 99 men on board perished. Rescue work was made difficult by the swift tides.

In May, nearly two years after the government's announcement that the change would be made, the Admiralty assumed full administrative control of the Fleet Air Arm, thus ending the dual control that was formerly shared with the Air Ministry. But that transfer did not end all problems. The former naval officers that were returned to that service were insufficient in number to man the naval planes and air stations. For a time some officers of the Royal Air Force were loaned to the Navy to make up the deficiency. But the former service was also occupied with the colossal task of expanding to meet the needs of the day and was soon anxious to reclaim its personnel serving afloat. The Navy thus found itself losing the R.A.F. personnel before it had trained the officers and men required to replace them.

Greece. The new naval shipyard at Scaramanga was formally opened on June 14 and it was planned to lay the keels of two destroyers there near the end of the year. As ways could be made available for building four additional men-of-war at the same time, it was announced that foreign assistance for building or repairing Greek naval vessels would soon be unnecessary. A request was made, however, on the British government for loan of officers to act as instructors and technical advisers.

Italy. In the year 1925, Italy commenced construction of her fine cruiser force. By 1933 7 splendid 10,000-ton, 8-inch cruisers were in commission; and 6 light cruisers joined the fleet in the same period. During the next four years 6 additional 6-inch cruisers were completed. For a time the government considered its needs in that respect were met, but keeping pace with the rest of the world it recently took steps for additional building. Two 8000-ton light cruisers and 12 3500-ton scouts were provided for. The latter seemed

to be Italy's reply to the French *Magador* class of super-destroyers (2800 tons normal displacement 8 5.5-inch semi-automatic guns, 10 torpedo tubes, 38 knots). These small cruisers were reported as being designed for about the same armament and speed as the *Magador's*; and, as with virtually all Italian light vessels, they were to carry mines.

The steady growth in submarines continued, keeping Italy ahead of any other power in the number of vessels of that type. The latest ones built were of about a thousand tons, and several nearing completion were of 1500 tons whereas those of a few years before had generally been from 600 to 800 tons. The surface speed of the newer craft had also been stepped up to 18 knots instead of 14 knots in the smaller craft.

The promise of the Minister of Marine to the Senate that eight battleships would be in service by 1941 seemed likely of fulfilment. Modernization of the four originally commissioned 1913-16 had been finished; the four new ones of 35,000-ton each with nine 15-inch guns were progressing rapidly. The *Littorio* and the *Vittorio Veneto* were about ready to join the fleet as the year drew to a close; the *Impero* laid down in May 1938 was launched only 18 months later, and the *Roma* was 4 months behind.

Japan. The policy of secrecy which the Japanese government had maintained as to its ship-building programs since the end of the Washington and London treaties remained unchanged. As building progressed, however, and as new ships were launched and passed into service, additional information reached the public. Informed sources were convinced that there were no startling innovations, nor alarming numbers. There were repeated press reports of two super-*Deutschlands* of 15,000 tons carrying 12-inch guns and having a speed of 32 knots. Such a vessel could have but little use except to protect or to make war on commerce. Reports also pointed to a six-year building program commencing in 1939-40 that called for 1200 million yen for new construction, 300 million for naval air equipment, and 188 million for extension of shore establishments. The minelaying submarine *I-62* collided with another submarine and was lost with 75 of the 81 members of its personnel.

The Sino-Japanese war resulted in the navy producing craft for landing operations that could be carried in a mother-ship and launched through flap doors over a flat stern. One type was 56 feet long, 3 foot draft, 8 knots, capacity 90 men, propeller of the worm type in a tunnel. A smaller one of 45-foot length, capacity 40 men could make 8 knots, and was equipped with a machine gun. A third type was an armored 50-foot boat, speed 10-12 knots, with two machine guns, a small rapid fire gun, with light armor protection for guns and crew.

Netherlands. Keels of two 8300-ton cruisers of the *Java* class were laid, the first of these was scheduled for trials in September 1941 and the second a few weeks later. A contract was placed in England for twenty coastal motorboats to be used part in home waters, part in the East Indies. They were to have four instead of the usual two torpedo tubes and were to carry two small A.A. guns. The Dutch *Naval Annual* for 1939 listed ships in commission as 3 cruisers, 1 flotilla leader, 8 destroyers, 15 torpedo boats, 23 submarines, 17 minelayers, 16 minesweepers, and various small craft. Under construction, in addition to the vessels previously mentioned, it listed 1 flotilla lead-

er, 4 destroyers, 8 submarines, and 3 gunboats. The naval authorities were also examining a project for construction of three 30,000-ton battleships for defense of the Dutch Indies. They were to be heavily armed and to make 23 knots. No final steps for financing or letting contracts were made before the end of the year.

The 1939 naval aviation budget of approximately \$4,000,000 was separate from military aviation and provided planes primarily for use in the Indies. A mission was sent to the United States to arrange for purchase of naval planes of American manufacture which had already proved more satisfactory for the service required than those built in the home country or elsewhere in Europe.

The first naval casualty of the war was the minesweeper *Willem Van Ewijk* which was destroyed by a mine, probably one of her own upon which she had drifted.

Norway. Orders were placed for two destroyers, heavier than their predecessors, 1300 tons. Two Laval turbines were to develop 30,000 shaft h.p. and produce 34 knots. Armament; two 21-inch double torpedo-tubes, four 4.7-inch double-purpose guns in twin mounts, two 1.6-inch A.A. guns, and two 50-cal. machine guns. Eight motor torpedo-boats, 40 knots speed, were ordered in England. Four of these were to be equipped with Italian motors (in payment for a shipment of fish and oil). All were to carry two 18-inch torpedo-tubes, and one rapid fire 0.8-inch gun. Many hundreds of officers of the Merchant Marine were given special courses on defensive measures against submarines and aircraft.

Poland. At the beginning of the year the Navy had about 325 officers and 3000 men to man its fleet of 15,000 tons built and building. The backbone of this fleet consisted of four destroyers, five submarines, and one minelayer. Early in the year two additional submarines were ordered. In the brief war with Germany the naval units were ineffective. One destroyer was sunk, and the minelayer badly damaged. The remaining three destroyers escaped to England and joined the British patrol forces. Two submarines escaped to England, one to Sweden, and the other three had an unknown fate.

Portugal. The ordinary naval budget for 1939 was \$7,750,000 (some \$80,000 less than for 1938). An extraordinary budget added \$1,400,000 to that amount for new construction and munitions (\$900,000) and for expansion of naval aviation (\$500,000). The fleet as organized in 1939 consisted of a division of five destroyers, a division of three torpedo-boats, a squadron of three submarines, seven sloops, seven gunboats, and thirteen other vessels. The construction program decreed in 1938 called for three 1400-ton destroyers, three 900-ton submarines, twelve motor torpedo-boats, a tanker, a survey vessel, two squadrons of seaplane scouts, one squadron of torpedo-bombers, and one squadron of observation planes; construction to commence in 1939 on three submarines, two patrol motorboats, one tanker, and one survey vessel.

Rumania. The budget of 1109 million lei was 181 million more than that of 1938. Progress was made on the new naval base at Taschau. War-time reserves of oil and gasoline were increased. The destroyers *Regele Ferdinand* and *Regina Maria* built in 1929 were modernized at Malta. The minelayer *Admiral Murgescu* was launched in Galatz. This was the first man-of-war built in the country. A sister-ship was on the way. Supervising technicians were French. These ships of 1068

tons carried two 4-inch double-purpose guns. The two 2100 h.p. Krupp motors were expected to give them 16 knots.

Siam. In proportion to its size and power this country had carried out the largest of all naval rearmament plans, having within four years increased its number of naval units from 15 to 50 and brought its personnel up to 400 officers and 5000 men. Further increases were indicated when two 4000-ton cruisers were ordered built in Trieste. Reports that these were to be 10,000-ton, 8-inch-gun ships appeared to be unfounded. More reliable information indicated that they would be of the Italian *Regolo* class with eight 5.3-inch guns and would have a speed of forty knots.

Spain. The personnel of the Spanish Fleet suffered great losses during the Civil War. More than 50 per cent of the officers died fighting or were massacred in the ports which initially remained in the hands of the Republicans. The ranks of petty officers and non-rated men were also depleted, although less in proportion. Despite the enrolment of officers and sailors of the merchant marine and men from other professions, many gaps remained to be filled.

The fleet, including ships formerly interned in neutral ports, consisted of: the battleship *Jaimé I*, 14,000 tons, 12-inch guns (seriously damaged and of little use for war when repaired); cruiser *Canarias*, 10,000 tons, 8-inch guns, built 1935; cruiser *Navarra*, 4900 tons, 6-inch guns, built 1923; cruisers *Libertad*, *Almirante Cervera*, and *Miguel Cervantes*, 7500 tons, 6-inch guns, built 1925 to 1931; 10 destroyers *Lepanto* class, 1500 tons, 4.7-inch guns, built 1928-36; two destroyers *Alsedo* class, 1050 tons, 4-inch guns, built 1922; 12 submarines 550 to 1050 tons, built since 1918; various other minor craft and auxiliaries.

Rehabilitation or development of naval and naval air bases at El Ferrol, Las Palmas, Cadiz, and Majorca made little progress; but, nonetheless, the potentialities of those strategic points for operating bases of submarines, raiders, and naval aircraft caused the great naval powers to watch closely the happenings there.

Turkey. From the naval viewpoint the mutual assistance pact between Turkey, Britain, and France signed in London in October was of importance chiefly because of the apparent assurance that Turkey would observe its pledges under the Montreux Convention and keep the Straits open in a Balkan war, thus enabling British and French warcraft to cut Soviet-German oil transport across the Black Sea. The government was reported to have contracted for a naval base at Gweljuk in the Sea of Marmora at a cost of \$11,500,000. The 1000-ton submarines *Batinay* and *Saldiraz* built in Germany were delivered by Krupp. Two similar vessels were under construction in Istanbul according to plans furnished by Krupp. All were designed for 20 knots surface speed.

Sweden. The budget 1939-40 gave 69,000,000 crowns to the Navy, 2,000,000 of which was for modernizing the *Svenge* class pre-war battleships, and 23,500,000 for new construction. The two cruisers building were allotted 14,000,000 of the estimated ultimate cost of 37,000,000 each. In July the government decided to add four additional submarines to the building program. The navy yards continued the activity on the five-year program inaugurated in 1937. The minesweepers *Arkolma* and *Lanscht* were delivered, the destroyer *Malmoe* held trials and the *Karlskrona* was not far behind; four torpedo-boats and at least one small

submarine were expected to be ready for commissioning early in 1940.

Union of Soviet Socialist Republics (Russia). Until 1929 leaders in Russia held that she needed no great high-seas fleet because it would do them no good in their restricted waters, but gradually the policy changed. In 1936 Admiral Orlov expressed the need for a large fleet embodying latest technical developments. Two years later, Molotov, President of the Soviet Cabinet declared that Russia needed a large fleet in accordance with their grand mission. Although precise information as to many units of the Russian Fleet was unobtainable there was ample evidence of the change in policy. It was known that a number of new ships had been built, and that others were under construction. There was less certainty, however, as to the effectiveness of the naval organization. Recovery from the purge of virtually all senior officers was slow, and the most striking need of the Navy was competent officers and men. Perhaps the most striking evidence of concentration on naval development was to be found in the plans for expansion of the personnel. Compulsory service was extended from four to five years, efforts were made to select the best men for sea service and special privileges and inducements were given to those demonstrating proficiency. All grades, however, remained under the political domination of Moscow, and the Captain of a ship was not its senior officer, he was merely coequal with the political Commissar on board. Even Admirals had to have their orders countersigned by a political officer.

In addition to replacing worn-out ships, expanding the size of the Navy, and building up the personnel, attention was given to improvement of base facilities. In that connection it was interesting to note that Nogaev, on the coast of the Sea of Okhotsk was one of the places being developed.

United States. The Navy continued to develop on the principle that its vital function would be to bring the enemy to American terms as quickly as possible, while keeping him at a safe distance from our shores. New construction, both for the orderly replacement of over-age vessels and aircraft, and for the orderly augmentation of existing strength, was continued with the view of bringing the naval strength up to that authorized by the Vinson-Trammell Act of 1934, and the Naval Expansion Act of 1938. The public and Congressmen, however, became increasingly concerned over the defenses of the country, and many questioned whether a navy of that strength would be adequate. The President announced that he would ask the next session of Congress to authorize further expansion of the fleet and to furnish the necessary funds therefor. Mr. Vinson, Chairman of the House Naval Affairs Committee, stated that he would introduce a naval authorization bill to provide for 95 ships, in addition to those already building, to include 3 aircraft carriers, 8 cruisers, 52 destroyers and 32 submarines and 6000 aircraft; estimated cost \$1,300,000,000. He estimated that by 1944 the under-age strength of the Navy would then be 15 battleships, 11 carriers, 173 destroyers, and 88 submarines. A critical situation that he did not discuss was the matter of auxiliary vessels to serve that fleet. Most of the existing auxiliaries were already old, and with difficulty met the existing fleet requirements. There were, however, nearly 80,000 tons of auxiliaries of half a dozen types under construction.

Naval aviation continued to be of ever-increasing importance in naval operations and great effort was exerted toward provision of adequate facilities for efficient operation of aircraft. The need for expanded facilities (aircraft tenders and naval air stations) was recognized and improvement in existing plants and procurement and development of new ones made rapid progress.

To take care of the operations of the Navy and the new construction during the fiscal year 1939, \$633,000,000 was paid out, aside from \$40,000,000 of emergency funds that were allotted to the Navy. The appropriations for the fiscal year 1940 amounted to \$773,000,000. One of the items eliminated from the Department's recommendations was funds for a naval air base at Wake. Funds were provided, however, for work at the Pacific Islands of Midway, Johnston, and Palmyra. The largest single item was \$254,000,000 for new construction. Over \$80,000,000 was allotted to naval aviation. Provision was made for 5000 additional men in the Navy.

During the year the heavy cruiser *Wichita* and the light cruiser *St. Louis* were the only two large ships to join the fleet, but the carrier *Wasp* held successful trials at sea in December. A number of destroyers and submarines were completed and delivery of aircraft proceeded at a satisfactory rate.

On May 23, 1939, the new submarine *Squalus* (q.v.) while making a dive was disabled in 240 feet of water but was promptly located and 33 of her crew of 59 were rescued. The submarine was raised after nearly four months salvage operations.

When war broke out in Europe the President set in motion machinery to maintain American neutrality and to keep informed of belligerent activities within three hundred miles of any United States territory. Patrol planes, cruisers, and destroyers were primarily used for that duty. A state of limited national emergency was proclaimed. Numerous out-of-commission ships were placed in service, enlisted personnel was being rapidly increased to 145,000 men, a number of retired and reserve officers were called to active duty, training programs were accelerated; and other steps were taken in order that the Navy might carry out its assigned duties in connection with enforcement of neutrality.

Yugoslavia. The government continued its policy of building up a small modern torpedo flotilla, the latest units of which were *Beograd* built in France, and *Zagreb* and *Ljubljana* built in Split. A 2400-ton flotilla leader was nearing completion. In the disturbed state of Europe, consideration was given to building 10 additional vessels, at least two of which were to be built in home yards.

See AERONAUTICS under *Military Aviation*; ARMAMENTS, COST OF; MILITARY PROGRESS; EUROPEAN WAR.

C. H. McMorris.

NAVIGATION. See SHIPPING; NAVAL PROGRESS.

NAVY, U.S. DEPARTMENT OF THE. Secretary of the Navy Claude A. Swanson (q.v.) died in July, 1939, and Assistant Secretary Charles Edison of New Jersey was subsequently authorized by Congress to serve as Acting Secretary until his appointment as Secretary on Dec. 30, 1939. Chief of Naval Operations was Adm. William D. Leahy of Wisconsin. See NAVAL PROGRESS. For expenditures, see the table under PUBLIC FINANCE.

NAZARENE, CHURCH OF THE. See RELIGIOUS ORGANIZATIONS.

NAZISM. See ARGENTINA, BELGIUM, BRAZIL, BULGARIA, CZECHO-SLOVAKIA, DENMARK, ESTONIA, GERMANY, HUNGARY, LATVIA, NETHERLANDS, THE; RUMANIA, SOUTH AFRICA, UNION OF; YUGOSLAVIA; also FASCISM.

NEBRASKA. Area and Population. Area, 77,520 square miles; included (1930) water, 712 square miles. Population: Apr. 1, 1930 (census), 1,377,963; July 1, 1937 (Federal estimate), 1,364,000; 1920 (census), 1,296,372. Omaha had (1930) 214,006 inhabitants; Lincoln, the capital, 75,933.

Agriculture. Nebraska harvested, in 1939, 17,645,000 acres of principal crops. This was less by about 11 per cent than the average for the decade 1928-37. Corn, on 6,836,000 acres, gave 82,032,000 bu. (estimated value on the farm, \$43,477,000); wheat, on 3,199,000 acres, 36,376,000 bu. (\$24,736,000); tame hay, on 909,000 acres, 1,118,000 tons (\$6,261,000); oats, 1,419,000 acres, 20,576,000 bu. (\$6,173,000); barley, 1,127,000 acres, 14,651,000 bu. (\$5,567,000); potatoes, 81,000 acres, 7,695,000 bu. (\$5,079,000); grain sorghums, 541,000 acres, 5,410,000 bu. (\$2,705,000); rye, 446,000 acres, 3,568,000 bu. (\$1,356,000). Sugar beets, on 70,000 acres, yielded 789,000 tons.

Manufacturing. In 1937, 1071 manufacturing establishments in Nebraska (in 1935, 1140) employed 19,590 wage-earners (in 1935, 17,855), who received in wages \$22,126,285 (in 1935, \$18,128,527); the output of manufactured products attained \$282,502,287 (in 1935, \$247,727,078), the part contributed by the processes of manufacture being \$67,425,143 (in 1935, \$58,394,983).

Manufactures mainly consisted of the processing of grain and of animal products. Meat-packing, grain-milling, and the making of butter accounted for the greater part of the industrial output. The dressing of poultry and the preparation of grease and tallow were minor sources of production in the same general field. Meat-packing establishments numbered 17 in 1937, and employed 5012 wage-earners; their product totaled \$112,708,382. Factories' output of butter totaled \$23,291,846; flour and other products of the grain mills amounted to \$25,524,101. Omaha, where most of the manufacturing centred, produced, in 1937, \$201,874,459 in manufactured goods.

Education. For the academic year 1938-39 Nebraska's inhabitants of school age (from 5 to 21) were reckoned as 376,909. Enrollments of pupils in the public schools numbered, for that year, 282,102; this comprised 197,622 in the elementary group and 84,480 in high schools. The year's expenditures for public-school education totaled \$20,319,467. Salaries of the 13,791 teachers for the year averaged, according to groups, from \$1128.07 to \$497.22.

Legislation. The unicameral Legislature convened in regular biennial session in January. It continued to draw attention as an innovation in State government, but its failure to dispose of problems more rapidly than the former Legislature of the ordinary bicameral type was noted against it. It passed two acts restricting the authority of the State's public power districts in some respects. The new acts were regarded as hindering negotiations for the power districts' purchase of the properties of the Iowa-Nebraska Light and Power Company, which feared that the State-fostered electric enterprise would lack authority to fix its rates and find it impossible to

finance the intended purchase. The Legislature eased some features of the laws affecting delinquent taxpayers and made a change in the administration of the tax on alcoholic beverages.

Political and Other Events. Plans to add the property of the Iowa-Nebraska Light and Power Company, a privately owned producer and distributor of electricity, to the works of the State's three public power districts were defeated in January, after long-continued negotiations. The company withdrew from these negotiations, declaring on January 23 that the districts would not, as had been expected, be able to finance the proposed purchase. It appeared that a measure introduced in the State Legislature, taking from the power districts the authority to fix rates for their product, had disposed investment bankers to doubt the merit of the districts' undertakings to repay debts incurred.

Later The Loup River Public Power District made, October 2, a contract with the Nebraska Power Company, which undertook to purchase electric current from the District, under terms that would bring the company about the immediate whole output of the three districts (already mutually bound by a selling agreement) and 40 per cent of their possible ultimate output.

The Missouri River's bed was changed by the Army Engineers at a point near Rulo, in the southeastern corner of the State, to do away with the only remaining unnavigable water between Kansas City and Omaha. The new bed ran about three-fourths of a mile from the old.

Investigation of the failure of the First Mortgage Acceptance Corporation of Omaha was followed by the resignation of the Director of the State Securities Bureau.

Officers. Nebraska's chief officers, serving in 1939, were: Governor, R. L. Cochran (Dem.); Lieutenant-Governor, William E. Johnson; Secretary of State, Harry R. Swanson; Auditor, Ray C. Johnson; Treasurer, John Havekost; Attorney-General, W. R. Johnson; Superintendent of Public Instruction, Charles W. Taylor.

NEBRASKA, UNIVERSITY OF. A State institution of higher education in Lincoln, Neb., founded in 1869. The net enrollment for the autumn of 1939 was 6771. There were 2231 students enrolled in the summer session of 1939. The faculty numbered 382 full-time members. The permanent endowment fund amounted to \$961,121. The library contained 341,000 volumes. Chancellor, Chauncey Samuel Boucher, Ph.D.

NEC. National Emergency Council. See GOVERNMENT REPORTS, OFFICE OF.

NECROLOGY. The following list contains the names of notable persons who died in 1939. Articles will be found in this volume, in their alphabetical order, on those whose names are given below without text.

ABBOTT, GRACE, died June 19, 1939.

ABERDEEN and TEMAIR, ISHBEI MARIA, MARCHIONESS OF. British social worker; died at Aberdeen, Apr. 18, 1939. See N. I. ENCY., VOL. I, p. 32. Her memoirs, *The Musings of a Scottish Granny*, appeared in 1936.

ADAMS, JOHN T. An American lawyer and politician; died in Dubuque, Ia., Oct. 28, 1939. See N. I. SUPP., VOL. 1, p. 7. During 1931-36 he was a member of the advisory committee of the Inland Waterways Corporation.

ALBERT, DUKE OF WURTEMBERG. German general, died at Stuttgart, Oct. 29, 1939. See N. I. ENCY., VOL. I, p. 63. During the World War he was commander of Germany's Fourth Army.

ALBERTI, MARIO. Italian economist; born, 1889; died in Como, Italy, Jan. 19, 1939; president of the Italian War Debts Bureau (1925); member, Italian delegation for Debt Settlement with the United States (1925); chairman, League of Nations Committee of Control of the

Guaranteeing States for the Austrian Loan; member of the League of Nations Financial Committee.

ALEXANDER, HARTLEY BURR. American educator, died at Claremont, Calif., July 27, 1939. See N. I. ENCY., VOL. I, p. 379 and N. I. SUPP., VOL. 1, p. 65. After 1927 he was professor of philosophy at Scripps College, Claremont. His latest work was *God and Man's Destiny* (1936).

ALEXANDER, WALLACE M. American sugar manufacturer, died in Honolulu, Nov. 21, 1939. See N. I. SUPP., VOL. 1, p. 66.

ALLEN OF HURTWOOD, BARON, REGINALD CLIFFORD ALLEN. British Socialist; born at Newport, Mon., England, May 9, 1889; died at Montana-Vermala, Switzerland, Mar. 3, 1939. After the World War he was treasurer and chairman of the Independent Labour Party and of the *New Leader* (1922-26), and was a member of the Labour and Socialist International (1924-26). During 1925-30 he was a director of the *Daily Herald*.

ALSCHULER, SAMUEL. American jurist; died in Chicago, Nov. 9, 1939; born there, Nov. 20, 1859. Appointed by President Wilson a judge of the U.S. Circuit Court of Appeals on Aug. 16, 1915, he served until May 15, 1936 when he resigned. He served as arbitrator between packers and their employees by order of the U.S. Secretary of Labor in 1918 and as a member of the U.S. Coal Commission in 1922 by appointment of President Harding.

ANDREWS, CHARLTON. American author, died at Boothbay Harbor, Me., Aug. 13, 1939. See N. I. SUPP., VOL. 1, p. 81. After 1928 he returned to the faculty of Stuyvesant High School, New York City.

ANGELL, FRANK. American psychologist; died in Palo Alto, Nov. 2, 1939; born in South Scituate, R. I., 1857. Associated with Stanford University from 1893 as professor of psychology, he was retired as emeritus in 1923. Because of his interest in sports, Angell Field at the University was named in his honor. During the World War he was a member of the Belgian Relief Commission.

ANSLEY, CLARKE FISHER, died Feb. 14, 1939.

ANTHONY, ALFRED WILLIAMS. American theologian; died in Waltham, Mass., Jan. 20, 1939. See N. I. SUPP., VOL. 1, p. 86. After 1929 he was a member of the advisory committee of the Union of Congregational and Christian Churches, retiring in 1933.

ANTIGA Y ESCOBAR, JUAN. Cuban physician and politician; Secretary of Labor in cabinet of Carlos Mendieta (1934); minister to Switzerland (1937-39), and permanent Cuban delegate to the League of Nations; died in Havana, Feb. 9, 1939; born in Mayajigua, Cuba, May 23, 1871.

ARROS, ENRIQUE FERNANDEZ. Spanish musician; died in San Sebastian, Spain in June, 1939. See N. I. ENCY., VOL. II, p. 20 and N. I. SUPP., VOL. 1, p. 93. He conducted his ballet "En Triana" at its première at the Paris Opéra in 1929 and in the same year made his last American visit.

ARNOLD, EDMUND GEORGE. British trade unionist; died in Leeds, July 13, 1939; born in Barnstaple, June 28, 1865. He was president of the Federation of Master Printers and Allied Trades of Great Britain and Ireland (1916-18), Lord Mayor of Leeds (1916-17), and pro-chancellor of the University of Leeds (1921-26).

AROSEMENA, JUAN, died Dec. 15, 1939.

ARPS, GEORGE F. American psychologist; died in Columbus, O., Sept. 16, 1939; born at Cary, Ill., Jan. 23, 1874. Associated with Ohio State University as professor of psychology and head of the department, from 1912, he was also dean of the College of Education (1920-37), and dean of the Graduate School thereafter.

BACKHOUSE, SIR ROGER R.C. British admiral, died in London, July 15, 1939; born Nov. 24, 1878. Entering the Navy in 1891, he saw service during the World War, was promoted to admiral in 1934, became commander of the Home Fleet in 1935, and after 1938 was First Sea Lord and Chief of the Naval Staff. He retired on May 17, 1939.

BAHADUR, SIR ADITYA NARAYAN SINGH. Maharajah of Benares; born, Nov. 17, 1874; succeeded to the gadi 1931; died in Benares, Apr. 5, 1939.

BAKER, THOMAS STOCKHAM, died Apr. 7, 1939.

BALFOUR, HENRY. British anthropologist; curator of Pitt Rivers Museum at Oxford (1891-1939); born, 1863; died in London, Feb. 9, 1939. President, Anthropological Institute of Great Britain and Ireland (1903-04) and the Royal Geographical Society; wrote chiefly on ethnological and archaeological subjects.

BARGER, GEORGE. Scottish chemist; died at Basle, Jan. 5, 1939. See N. I. SUPP., VOL. 1, p. 168. He was appointed Regius professor of Chemistry at Glasgow University in 1938, and received the Hanbury medal of the Pharmaceutical Society in 1934, the Longstaff medal of the Chemical Society in 1936, and the medal of the Royal Society in 1938.

BARTH, CARL G. American mechanical engineer; died in Philadelphia, Oct. 28, 1939; born in Christiania (Oslo), Norway, Feb. 28, 1860. Associated with Frederick W. Taylor, the father of scientific management after

1901, he developed and introduced the Taylor system of scientific management until his retirement in 1923. During 1911-16 he lectured at Harvard University and during 1914-16 at the University of Chicago.

BATES, ERNEST SUTHERLAND, died Dec. 4, 1939.

BEATY, AMOS L. American lawyer; president of the Texas Co., (1920-27), the American Petroleum Institute (1931-32); and chairman of the Petroleum Code Authority of the National Recovery Administration (1934); born in Red River Co., Tex., Sept. 1, 1870; died in New York, Apr. 29, 1939.

BEGGS, GEORGE ERLE. American civil engineer, died in Princeton, N. J., Nov. 23, 1939; born in Ashland, Ill., Apr. 22, 1883. An authority on bridge building, he was associated with Princeton University from 1914 and was professor of civil engineering after 1930, and head of the department after 1937. He wrote *Live Load Stresses in Railway Bridges* (1916), and in October, 1939 was elected chairman of the Engineering Foundation.

BENSON, SIR FRANK. British actor-manager, died in London, Dec. 31, 1939. See N. I. SUPP., Vol. 1, p. 195. During 1920-29 he appeared in *Hamlet*, *The Merchant of Venice*, *The School for Scandal*, etc., and his last role was as Dr. Calus in *The Merry Wives of Windsor* (1933). He published *My Memoirs* (1930).

BERNSTORFF, COUNT JOHANN HEINRICH VON. German diplomat, died in Geneva, Oct. 6, 1939. See N. I. ENCY., Vol. III, p. 190, and N. I. SUPP., Vol. 1, p. 201. A member of the German Diet until 1928 and president of the German League of Nations Union until 1933, he thereafter lived in self-imposed exile in Switzerland. He wrote *My Three Years in America* (1920) and *Memoirs of Count Bernstorff* (1936).

BETHELL, HENRY ARTHUR. British officer; died Oct. 7, 1939; born in Bath, Dec. 14, 1861. He served in the Royal Field Artillery from 1860 to 1911 and again during the World War as a brigadier general. He was noted for his contributions to artillery science for which he received the Lefroy Medal. He wrote *Modern Guns and Gunnery* (1906) and *Modern Artillery in the Field* (1910).

BIGELOW, WILLARD DELL. American chemist; died in Washington, Mar. 6, 1939. See N. I. ENCY., Vol. III, p. 276. He became chief chemist for the National Cancer's Association in 1913 and after 1918 was director of their research laboratories.

BIRCH, SIR (JAMES FREDERICK) NOEL. British soldier; died in London, Feb. 3, 1939; born, Dec. 29, 1865. He entered the army in 1885 and served throughout the World War as artillery adviser to the commander-in-chief in France (1916-19). Thereafter he was master-general of the Ordnance and member of the Army Council (1923-27). Promoted to general in 1926, he retired in the following year.

BITTNER, JULIUS. Austrian composer; died in Vienna, Jan. 9, 1939. See N. I. SUPP., Vol. 1, p. 211.

BLEDSE, SAMUEL T. American lawyer; counsel for the Atchison, Topeka & Santa Fe Railway from 1908 and president and chairman of the executive committee, 1933-39; born, Clinton Co., Ky., May 12, 1868; died, Chicago, Mar. 8, 1939.

BODANZKY, ARTUR, died Nov. 23, 1939.

BOLLES, ALBERT S. American lawyer, educator, and author; died in Williamstown, Mass., May 8, 1939. See N. I. ENCY., Vol. III, p. 481. His latest work was *Putnam's Handy Law Book for the Layman* (1921; 1925).

BOLTON, CHESTER C. American Republican Congressman from Ohio; died in Cleveland, Oct. 29, 1939; born there, Sept. 5, 1882. He served in Congress from 1929 to 1936 when he was defeated, but in November, 1939 he was re-elected.

BONYTHON, SIR (JOHN) LANGDON. Australian newspaper publisher; died in October, 1939; born in London, Oct. 15, 1848. Associated with the *Adelaide Advertiser* from 1864, he was the editor and sole proprietor from 1894 to 1924. He was noted for his many liberal contributions to Adelaide University.

BÓRQUEZ SOLAR, ANTONIO. See SPANISH-AMERICAN LITERATURE, Chile, Necrology.

BRABOURNE, BARON, MICHAEL HERBERT RUDOLPH KNATCHBULL. British administrator; Governor of Bombay, 1933-37; Governor of Bengal, 1937-39; died in Calcutta, Feb. 23, 1939; born in Kent, May 8, 1895.

BRADLEY, DAN FREEMAN. American Congregational clergyman (ordained in 1885); died in Cleveland, O., Nov. 11, 1939; born in Bangkok, Siam, Mar. 17, 1857. He was acting president of Yankton College (1889-92), pastor of the First Congregational Church, Grand Rapids, Mich., (1892-1902), president of Grinnell College (1902-05), and thereafter pastor of Pilgrim Congregational Church in Cleveland until his retirement in 1937.

BRADY, ALICE. American actress; died in New York, Oct. 28, 1939. See N. I. SUPP., Vol. 1, p. 241. In 1931 she had one of the leading roles in Eugene O'Neill's trilogy, *Mourning Becomes Electra*. Her last New York appearance was in *Mademoiselle* (1932). She returned to motion pictures in 1933, and her performance of Mrs. O'Leary in *Old Chicago* (1938) won her a Motion Picture

Academy Award. Her last film was *Young Mr. Lincoln* (1939).

BRAWLEY, BENJAMIN. American Negro clergyman and educator, died in Washington, Feb. 1, 1939. See N. I. SUPP., Vol. 1, p. 243. In 1931 he became professor of English at Howard University.

BREWER, GEORGE EMERSON, died Dec. 24, 1939.

BRISTOL, REAR ADMIRAL MARK LAMBERT, U.S.N., RET., died May 13, 1939.

BRITT, JAMES J. American lawyer; died in Asheville, N. C., Dec. 26, 1939; born in Johnson City, Tenn., Mar. 4, 1861. He was a Republican Congressman from North Carolina during 1915-19 and was chief counsel for the Bureau of Industrial Alcohol and the Bureau of Prohibition of the Treasury Department during 1922-32.

BRODIE, EDWARD E. American publisher and diplomat; born in Fort Stevens, Ore., Mar. 12, 1876; died in Salem, Ore., June 27, 1939. Editor and publisher of the *Oregon City Morning Enterprise* (1908-35) he was Envoy Extraordinary and Minister Plenipotentiary to Siam (1921-25) and to Finland (1930-33).

BROWN, (MATTHEW) HEYWOOD (CAMPBELL), died Dec. 18, 1939.

BROWN, SIR EDWARD. British poultry expert, first president of the World Poultry Science Association (1912-27); founder of World's Poultry Congresses and National Poultry Council, Inc.; author of *Poultry Breeding and Production* (2 vol., 1929) and *Memoirs at Eventide* (1934); died at Theale, Berks., Aug. 7, 1939; born at Newcastle, Sept. 8, 1851.

BROWN, JAMES. Scottish Labor M.P.; born in Ayr, Dec. 16, 1862; died there, Mar. 21, 1939. He represented South Ayrshire during 1918-31 and after 1935; was secretary of the Scottish Miners' National Union (1917-21), and was Lord High Commissioner to the Church of Scotland in 1924, 1930, and 1931, the first commoner to hold this position in 300 years.

BROWN, WALLACE E. American Methodist Episcopal bishop; died in Portland, Ore., Nov. 18, 1939; born in Chittenango, N. Y., Oct. 30, 1868. Ordained in 1894, he was elected Bishop on May 25, 1924 and served in China, Helena, Mont., Chattanooga, Tenn. On June 9, 1939 he was transferred to the diocese of Oregon, Washington, Idaho, and Alaska.

BROWN, WILLIAM HENRY. American botanist; died in Baltimore, Nov. 9, 1939; born in Richmond, Va., Oct. 6, 1884. After 1911 he held a variety of positions in the Philippines, including that of professor of botany and head of the department at the University of Philippines (1919-24) and director of the Bureau of Science, Manila (1924-33). In February, 1938 he became a lecturer in botany at Johns Hopkins University. An authority on tropical trees he was the author of *A Textbook of General Botany* (1925) and *The Plant Kingdom* (1935).

BROWNE, SIR GEORGE WASHINGTON. Scottish architect, architect of the Edinburgh Public Library (1887-90) and the Scottish National Memorial to King Edward (1912-22); died in Edinburgh, June 15, 1939; born in Glasgow, Sept. 21, 1853.

BROWNRIE, SIR DOUGLASS. British naval officer; born July 25, 1867; died in Cannes, France, Feb. 14, 1939. During the World War he served as chief censor at the Admiralty, retiring with the rank of rear-admiral in 1919.

He published *Indiscretions of the Naval Censor* (1919).

BRUCE, CHARLES GRANVILLE. British soldier and explorer, died in London, July 12, 1939; born Apr. 7, 1866. He retired from the Army in 1920 after service in the East and devoted himself thereafter to scaling Mt. Everest. He led two attempts, one in 1922 and one in 1924, neither of which were successful, but which set records for the distance covered. He received the Gill Memorial Prize of the Royal Geographical Society (1915), the Founders' Medal, and a gold medal of the Société de Géographie Française, and wrote *The Assault on Mount Everest*, 1922 (1923), and *Himalayan Wanderer* (1934).

BRUCHESI, PAUL. Canadian Roman Catholic Archbishop of Montreal; died in Montreal, Sept. 20, 1939. See N. I. ENCY., Vol. IV, p. 54. He retired from active duties in 1919.

BULL, GEORGE D., S.J. American Roman Catholic clergyman; born in New York in 1890; died there, May 27, 1939. He entered the Society of Jesus in 1908, was ordained in 1922, taught philosophy at Woodstock College (1929-32) and was professor and head of the department of philosophy at Fordham University from 1933. He was recognized as an authority on scholastic philosophy.

BURNETT, CHARLES. American soldier; died in Washington, Nov. 27, 1939; born in Knoxville, Tenn., Oct. 28, 1877. He entered the army in 1901 and saw service as military attaché in Tokio in 1923, as adviser to the American delegation at the London Naval Conference in 1930, and in 1937 was appointed chief of the Bureau of Insular Affairs of the War Department, with the rank of brigadier-general. In July, 1938 he was made executive officer in the office of the Chief of Cavalry with the rank of colonel.

BURNHAM, JOHN BIRD. American conservationist; died in Willsboro, N. Y., Sept. 24, 1939; born in New

Castle, Del., Mar. 16, 1869. He served as chief game protector and department commissioner, State Forest Fish and Game Commission of New York (1905-11), as president of the American Game Protective Association (1911-28), as chairman of the advisory commission to U.S. Department of Agriculture on migratory bird law (1913-31), and chairman of the U.S. Forest Service Committee on game in national forests (1913-31). His book *The Rim of Mystery* (1929) tells of an expedition to Siberia in 1921 for a rare specimen of mountain sheep.

BURR, GEORGE E. American artist, known for his etchings of Southwestern desert scenes; died in Phoenix, Ariz., Nov. 17, 1939; born in Monroe Falls, O., Apr. 15, 1859. His work is in the Luxembourg, Paris and in the Metropolitan Museum of Art, New York.

BURT, (EDWARD) A. (NGUS). American botanist; born in Athens, Pa., Apr. 9, 1859; died in Saratoga Springs, N. Y., Apr. 27, 1939. One of the leading botanists in the United States, Dr. Burt was professor of natural history at Middlebury College (1895-1913), librarian and mycologist, Missouri Botanic Garden and professor of botany at Washington University, St. Louis, (1913-25) when he retired. He wrote the text for *Farlow's Illustrations of the Larger Fungi* (1929) and his herbarium is preserved in the Farlow Herbarium and Library at Harvard University.

BUSCH, BECERRA, GERMAN, died Aug. 23, 1939.

BUTLER, PIERCE, died Nov. 16, 1939.

BUTTENWISER, MOSES. American Biblical scholar; died at Palo Alto, Calif., Mar. 12, 1939. See N. I. ENCY., VOL. I, p. 279. He retired as professor of Biblical Exegesis at Hebrew Union College, Cincinnati in 1934, and in 1937 published *The Psalms*.

CADOT, RICHARD CLARKE, died May 8, 1939.

CALINESCU, ARMAND, assassinated Sept. 21, 1939.

CAPFON, JAMES. Canadian educator; died in Kingston, Ont., Sept. 19, 1939. See N. I. ENCY., VOL. IV, p. 508 and N. I. SUPP., VOL. I, p. 302.

CARPENTER, GEORGE HERBERT. British entomologist, professor of zoology at Royal College of Science, Dublin (1904-22) and Keeper of the Manchester Museum, University of Manchester, 1923-34; died Jan. 22, 1939; born in London, 1865. He edited the *Irish Naturalist* (1892-1922) and was the author of several books on insects, the latest being *The Biology of Insects* (1928).

CARROLL, BRYL F. American politician, governor of Iowa during 1909-11 and 1911-13; died in Louisville, Ky., Dec. 16, 1939; born in Davis Co., Ia., Mar. 15, 1860.

CARTER, HOWARD, died Mar. 2, 1939.

CASLER, HERMAN. American inventor of the Biograph, forerunner of the modern motion-picture projector, first shown to the public in New York, Oct. 12, 1896; died in Canastota, N. Y., July 20, 1939; born in Sandwich, Ill., in 1867.

CASTILLO, EDUARDO. See SPANISH-AMERICAN LITERATURES, Chile, Necrology.

CEDILLO, GEN. SATURNINO. Mexican politician, ruler of the State of San Luis Potosi, and at various times Mexican minister of agriculture. In May, 1938 he led an unsuccessful revolt against the Mexican Government, and on Jan. 11, 1939 was killed near Matehuala, San Luis Potosi in a clash with Federal troops.

CESPEDES Y QUESADA, CARLOS MANUEL DE, died Mar. 28, 1939.

CHANDLER, COL. CHARLES DE FOREST, U.S.A., RET., died May 17, 1939.

CHAPMAN, FRANCIS. American lawyer; dean of Temple University Law School from 1906; author of *Principles of the Law of Evidence* (1930); born in Burlington, N. J., Aug. 19, 1869; died in Philadelphia, May 2, 1939.

CHAPPELLE, LOUIS DE. French politician; died in Ville Davray, Dec. 9, 1939; born in Saint Just, June 21, 1876. A leader of the Left Radical Party, he was a deputy from Cotes-du-Nord from 1910. He served in various cabinets, as minister of mercantile marine (1931-32; 1936); minister of colonies (1932) minister of marine (1934; Apr., 1938-Sept. 1939).

CHEN LU, assassinated Feb. 19-20, 1939.

CHESHIRE, FREDERIC JOHN. British physicist; died in Reading, Mar. 24, 1939; born in Leeds, June 8, 1860. He lectured on physics at Birkbeck College for 25 years and was formerly director of the optical engineering department of the Imperial College, South Kensington. He was president of the Optical Society (1916-20) and of the Royal Microscopical Society (1922-24).

CHILTON, WILLIAM E. American lawyer and ex-Senator, died in Charleston, W. Va., Nov. 7, 1939. See N. I. ENCY., VOL. V, p. 202.

CHLAPOWSKI, COUNT ALFRED. Polish diplomat, ambassador to France (1924-36); born at Poznan, Poland, Oct. 5, 1874; reported executed by the Germans, November, 1939.

CIANO OF CORTELAZZO, COUNT CONSTANZO. Italian naval officer and politician; born at Leghorn in 1876; died at Ponte Moriano, Tuscany, June 27, 1939. During the World War he served as Admiral of the Fleet. Elected a

deputy in 1921 he served as minister of posts in 1924, and of communications during 1924-34. Thereafter he was president of the Chamber, and in 1938, upon its reorganization as the Chamber of Fasces, he was named president.

CLERGUE, FRANCIS. Canadian-American industrialist; died in Montreal, Jan. 19, 1939. See N. I. ENCY., VOL. V, p. 447. He founded and was first president of the Algoma Steel Corporation which constructed the first Bessemer steel plant in Canada.

COLBY, JAMES FAIRBANKS. American lawyer, died in Hanover, N. H., Oct. 21, 1939; born in St. Johnsbury, Vt., Nov. 18, 1850. He was associated with Yale University during 1879-85, and thereafter was Parker professor of law and political science at Dartmouth College. He was retired as professor emeritus in 1916.

COLCORD, ROSWELL K. American politician; died in Carson City, Nev., Oct. 30, 1939; born in Searsport, Me., Apr. 25, 1939. He was governor of Nevada during 1890-94 and superintendent of the mint at Carson City from 1898 to 1911.

COLE, GEORGE WATSON. American librarian and bibliographer, died at San Marino, Calif., Oct. 10, 1939. See N. I. ENCY., VOL. V, p. 571. He became librarian of the Henry E. Huntington Library and Art Gallery at San Marino in 1915 and was retired as librarian emeritus in 1924. The author of many works on bibliography, including *A Survey of the Bibliography of English Literature, 1475-1640* (1930) and *Index to Bibliographical Papers* (1933). He gave, in 1937, his bibliographical collection to Yale University Library.

COLEMAN, ARTHUR PHILEMON. Canadian geologist; died in Toronto, Feb. 26, 1939. See N. I. ENCY., VOL. V, p. 572 and N. I. SUPP., VOL. I, p. 375. He was geologist for the Ontario Department of Mines from 1931 to 1934, and was awarded the Victoria Medal of the Royal Geographical Society in 1933 and the Penrose Medal of the Geological Society of America in 1936.

COLLIER, BARRON, died Mar. 13, 1939.

COMISKEY, J. LOUIS. American sportsman, owner and president of the Chicago White Sox Baseball Club of the American League; died in Eagle River, Wis., July 18, 1939; born in Dubuque, Ia., Aug. 12, 1885.

COOK, SIR HERBERT FREDERICK. British financier; chairman until 1931 of Cook, Son & Co., Ltd.; died in Richmond, May 4, 1939; born, Nov. 18, 1868. Interested in art, he was a trustee of the National Portrait Gallery (1916-30) and of the National Gallery (1923-30), and was one of the founders of the National Art Collections Fund.

COOKE, GEORGE ALBERT. British clergyman; died at Cheltenham, Sept. 9, 1939. See N. I. ENCY., VOL. VI, p. 30. Rector of Bettiscombe, Bridport, Dorset, he was Oriel professor of the Interpretation of Holy Scripture at Oxford (1908-14) and Regius Professor of Hebrew, Oxford and Canon of Christ Church (1914-36). He published a *Prayer-Book Psalter Revised* in 1939.

CORCORAN, FRANCIS VINCENT, C.M. American Roman Catholic clergyman and educator; born in Pittsburgh, Pa., May 6, 1879; died in Los Angeles, Jan. 28, 1939. He entered the Congregation of the Missions, and was ordained July 27, 1902, and was subsequently professor of theology (1907-30) and vice-president (1926-30) of Kenrick Seminary, St. Louis, Mo.; president, De Paul University, Chicago, (1930-35), and superior of Los Angeles College from 1936.

CORTIGIAN, EDWARD P., died Jan. 17, 1939.

COWLES, HENRY CHANDLER. American botanist, died in Chicago, Sept. 12, 1939. See N. I. ENCY., VOL. VI, p. 200. After 1915 he became professor of botany at the University of Chicago and was retired as emeritus in 1934, having served as chairman of the Department (1925-34). An outstanding botanist he was president of the Ecological Society of America (1918) and of the Botanical Society of America (1922), and editor of the *Botanical Gazette* (1925-34).

CRAMP, WILLIAM. British electrical engineer, professor of electrical engineering at the University, Edgbaston, Birmingham after 1919; died in Birmingham, Apr. 20, 1939; born in 1876. He invented the Cramp Single Phase Motor.

CRANE, CHARLES RICHARD. American manufacturer and diplomat; died in Palm Springs, Calif., Feb. 14, 1939. See N. I. SUPP., VOL. I, p. 406.

CRAVENS, (WILLIAM) BEN. American Congressman; born in Fort Smith, Ark., Jan. 17, 1874; died in Washington, Jan. 13, 1939. Dem. member of the 60th to 63d (1907-15) and the 73d to 75th (1933-39) Congresses, he advocated flood control and agricultural legislation.

CRAWFORD, JAMES PYLE WICKERSHAM. American Spanish scholar, professor of Spanish at the University of Pennsylvania from 1914; editor of *Hispanic Review* from 1933, and author of *Spanish Drama before Lope de Vega* (1923; rev., 1937); died in West Philadelphia, Pa., Sept. 22, 1939; born in Lancaster, Pa., Feb. 19, 1882.

CRISTEA, MIRON, died Mar. 6, 1939.

CRITZ, HUGH. American educator; born in Starkville, Miss., Dec. 21, 1876; died in Clarksdale, Miss., Jan. 28,

1939. He joined the faculty of Mississippi Agricultural and Mechanical College (subsequently Mississippi State College) in 1906, and served as its president during 1930-34.

CROMMELIN, ANDREW CLAUDE DE LA CHEROIS. British astronomer, died in London, Sept. 20, 1939; born in Cushendun, Ireland, Feb. 6, 1865. Assistant at the Royal Observatory at Greenwich from 1891 to 1927, he was president of the Royal Astronomical Society (1929-30) and of the British Astronomical Association (1904-06).

CRONAU, RUDOLF. American author, died at Tarrytown, N. Y., Oct. 27, 1939. See N. I. SUPP., VOL. 1, p. 408.

CROSBY, REAR ADMIRAL WALTER SELWYN, U.S.N., RET., died Jan. 6, 1939.

CRUIKSHANK, ERNEST ALEXANDER. Canadian soldier and historian, died in Ottawa, June 23, 1939. See N. I. ENCY., VOL. VI, p. 313. Appointed a brigadier-general in the permanent militia in 1915 he saw service during the World War and from 1919 to June 1, 1921 he was director of the Historical Section of the General Staff, when he retired. After 1919 he was chairman of the Historical Sites and Monuments Board. Among his later writings were a *History of the Great War* (1920), and in 1935 he received the Tyrrell gold medal of the Royal Society of Canada.

CUBITT, GEN. SIR THOMAS ASTLEY. British soldier and administrator, born in Norwich, Eng., Apr. 9, 1871; died in Amersham Common, Bucks., May 19, 1939. Entering the Army in 1891 he saw service in West Africa and during the World War, and from 1931 to 1936 was Governor and Commander-in-Chief of Bermuda.

CUMBERBATCH, ELKIN PERCY. British electro-therapist; born in Queen Charlton, June 20, 1880; died in London, Mar. 24, 1939. He served St. Bartholomew's Hospital, London as demonstrator in physiology at the Medical School (1911-13), as chief assistant to the X-ray department (1911-12), and after 1912 as medical officer in charge of the Electrical Department. Also, he was examiner in Medical Electricity at Cambridge University (1921-23; 1927-37), and wrote *Essentials of Medical Electricity* (7th ed.).

CUSHING, HARVEY WILLIAMS, died Oct. 7, 1939.

CUSTANCE, WILFRED NEVILLE. British naval officer, died at sea, December, 1939; born, June 25, 1884. He entered the navy in 1900, saw service in the World War, was promoted to rear-admiral in 1936 and in 1938 was given command of the Australian Squadron of the British navy.

CUSICK, PETER, S.J. American Roman Catholic clergyman; born in Scranton, Pa. 1876; died in New York Feb. 7, 1939. He entered the Society of Jesus, was ordained in 1895, and from 1923 to 1929 was president of Canisius College, Buffalo, N. Y. During 1931-38 he was director of the shrine of the North American Martyrs at Auriesville, N. Y.

CUTHBERT, VERY REV. FATHER, O.S.F.C. English Franciscan; born in Brighton in 1866; died in Assisi, Italy, in March, 1939. He entered the Order of Capuchin Franciscans in 1881, was ordained in 1889, and during 1911-30 was principal of the Franciscan House of Studies (Grosseteste House) at Oxford University, when he was appointed president of the Capuchin Franciscan College at Assisi.

DALY, J(OHN) BURKWOOD. American Congressman (Dem.) member of the 74th and 75th Congresses (1935-39); member of the House Appropriations Committee; born in Philadelphia, 1872; died there, Mar. 12, 1939.

D'AMBRA, LUCIO. Italian novelist and playwright; died in Rome, Dec. 31, 1939; born in 1880. His play, *L'Incendio Doloso* ("The False Alarm") was produced in New York City on Nov. 15, 1931.

DARANYI, KOLOMAN. Hungarian politician; died in Budapest, Nov. 1, 1939; born there, Mar. 22, 1886. Entering the cabinet in 1928, on Oct. 10, 1936 he succeeded Gombos as Premier. In an attempt to follow a middle road between the pro-Nazis and the Liberals, political necessity drove him into the German camp. On May 13, 1938 he resigned, the opposition claiming that he had acceded to Fascist demands and was unable to maintain peace and order. Subsequently he was elected president of the House of Representatives. See HUNGARY under *History*.

DAVIDSON, ISRAEL. American Hebrew authority; born in Yanova, Russia, May 27, 1870; died in Great Neck, L. I., June 27, 1939. After 1915 he became professor of medieval Hebrew literature at the Jewish Theological Seminary of America, and in 1926 he was visiting professor at the Hebrew University in Jerusalem. He published *Thesaurus of Medieval Hebrew Poetry* (4 vol., 1933).

DAVIES, J(OHN) VIPOND, died Oct. 4, 1939.

DE LA BARRA, FRANCISCO LEON. Mexican politician; died in Biarritz, France, Sept. 23, 1939; born in Querétaro, 1863. He was ambassador to the United States (1908-11), and in 1911 after the overthrow of Diaz was provisional president for about six months. In 1913 he was elected governor of the State of Mexico, but in the

following year went into exile in Paris, where he subsequently was professor of international law at the Sorbonne.

DELL, ETHEL M. (MRS. GERALD SAVAGE). English novelist, author of some 25 books, the latest being *Serpent in the Garden* (1938); died at Hertford, Sept. 17, 1939.

DETERDING, SIR HENRI, died Feb. 4, 1939.

DE VRIES, MARION. American lawyer; died in Lodi, Calif., Sept. 11, 1939. See N. I. ENCY., VOL. VI, p. 746. He resigned from the U.S. Court of Customs Appeals in 1922, having been presiding judge during 1921-22. Thereafter he practised law.

DMOWSKI, ROMAN. Polish politician; died in Warsaw, Jan. 2, 1939; born in 1864. Elected to the Russian Duma in 1903, he became the leader of the Poles, having previously founded the Polish National Democratic Party (1893). After the World War he headed the Paris committee of Poland recognized as the temporary government, and was a Polish delegate to the Paris Peace Conference and was a signer of the Versailles Treaty (1919). Elected to the Polish Diet in 1919, he served until 1922 when he became minister of foreign affairs (1923). His influence waned thereafter and in 1924 he retired from active politics. He founded in 1926 the Great Camp of Poland in opposition to Pilsudski.

DOHERTY, HENRY LATHAM, died Dec. 26, 1939.

DOLAN, FRANCIS JAMES, S.J. American educator; died in Worcester, Mass., Sept. 6, 1939; born in Jamaica Plain, Mass., July 14, 1893. He entered the Society of Jesus in 1912, was ordained in 1926, and in 1933 was appointed president of Holy Cross College.

DOLCI, ANGELO MARIA, CARDINAL. Italian Roman Catholic prelate; died at Civitella d'Agliano, Sept. 14, 1939; born there, July 12, 1867. Ordained in 1890, he was named Bishop of Gubbio in 1900. Appointed Archbishop of Amalfi in 1911 he served as Apostolic delegate to Constantinople (1914) as Nuncio to Belgium (1922) and to Rumania (1923-33). Elevated to Cardinal in 1933, he became a member of the Curia engaged in the Vatican's administrative affairs.

DOMINGO Y SAN JUAN, MARCELINO. Spanish politician; born in Tarragona; died in Toulouse, France, Mar. 2, 1939. A former leader of the Radical-Republican-Socialist party, he was in exile when King Alfonso abdicated in 1931. Returning to Spain he was elected to the Cortes as a Radical Socialist and subsequently he became minister of public instruction, and minister of agriculture. He visited the United States in 1936 to obtain support for the Spanish Loyalist Government. He wrote many political tracts and pamphlets as well as several plays.

DONNELLY, CHARLES. American railroad official, president of the Northern Pacific Railway from Dec. 1, 1920; died in St. Paul, Minn., Sept. 4, 1939; born in Wisconsin Rapids, Wis., Nov. 9, 1869.

DOUGLAS, SIR (HENRY) PERCY. British naval officer, died in Dover, England, Nov. 4, 1939; born, Nov. 1, 1876. He entered the Navy in 1890, served in the surveying service (1897-1924), and was hydrographer of the Navy (1924-32). Promoted to rear admiral in 1927, he was placed on the retired list in 1929, and was promoted to vice admiral, retired, in 1931, and knighted in 1933. Thereafter, he was acting conservator of the Mersey (1933) and chairman of Dover Harbour Board (1934). Admiral Douglas invented the Douglas Protractor and was co-inventor of the Douglas-Appleyard Arcless Sextant.

DUNN, HERBERT OMAR. American naval officer; born in Westerly, R. I., May 29, 1857; died in Baltimore, Md., Feb. 13, 1939. He was promoted through the grades to rear admiral (1915) and was retired in 1921. During the World War he commanded the 5th Division of the Atlantic fleet and the Azores detachment, U.S. Atlantic fleet. Admiral Dunn was the inventor of the Dunn anchor.

DUVEEN OF MILBANK, BARON, JOSEPH DUVEEN, died May 25, 1939.

DYSON, SIR FRANK WATSON, died May 25, 1939.

EARLE, REAR ADMIRAL RALPH, U.S.N., RET., died Feb. 13, 1939.

EASTMAN, CHARLES A. (OHYESA). American physician died in Detroit, Mich., Jan. 8, 1939. See N. I. ENCY., VOL. VII, p. 422. In 1933 he received the first Indian Achievement Medal awarded by the Indian Council Fire of Chicago.

EGBERT, SENECA. American hygienist; died in Wayne, Pa., Dec. 6, 1939; born in Petroleum Center, Pa., Feb. 17, 1863. He was associated with the Medico-Chirurgical College at Temple University from 1893 to 1916, when he became professor of hygiene at the University of Pennsylvania Medical School. He was retired as emeritus in 1932. He wrote *Manual of Hygiene and Sanitation* (1898; 8th ed., 1926); *Personal Hygiene for Nurses* (1930).

ELLIS, (HENRY) HAVELOCK, died July 8, 1939.

ENNA, AUGUST. Danish composer, died in Copenhagen, Aug. 3, 1939. See N. I. ENCY., VOL. VII, p. 787.

ESTREICHER, STANISLAW. Polish jurist; died in a concentration camp at Oranienburg, Germany, Dec. 28, 1939; born in 1869. He was professor of Eastern European Law

and of Comparative Law at Cracow University and its president; joint-editor of *Czas*, and author of *Shakespeare in Poland*. The German Government offered him the premiership of the puppet government of the Polish Protectorate which it intended to create at the end of October, 1939, but he refused and two weeks later was arrested and sent to a concentration camp.

EVANGELIDES, NICOLAS. See NICOLAS V.

EVANS, MILTON G. American Baptist theologian; died in Carbondale, Pa., Sept. 17, 1939; born near Ebensburg, Pa., Dec. 7, 1862. Associated with Crozer Theological Seminary from 1890, he was its president and professor of comparative theology during 1909-34, and thereafter emeritus.

EVERWIJN, J(AN) C(HARLES) A(UGUST). Dutch diplomat; died at The Hague, Jan. 5, 1939. See N. I. SUPP., Vol. I, p. 526.

FAIRBANKS, DOUGLAS, died Dec. 12, 1939.

FAIRBANKS, FRANK PERLEY. American painter, died in Rome, Italy, Aug. 8, 1939; born in Boston, Mass., July 17, 1875. He was annual professor at the School of Fine Arts, American Academy in Rome (1919-21) and professor in charge of the School (1922-32). His principal works include the decorations in the Public Library, St. Paul, Minn.; the U.S. Supreme Court Building, Washington, D. C.

FARRAND, LIVINGSTON, died Nov. 8, 1939.

FAWCETT, GEORGE. American actor; on the stage from 1886 to 1916, he appeared with Nat Goodwin and Maude Adams and founded the celebrated Fawcett Stock Co. After 1915 he was seen in motion pictures. Born in Fairfax Co., Va., Aug. 25, 1860; died in Nantucket, Mass., June 6, 1939.

FECHNER, ROBERT. American machinist; died in Washington, Dec. 31, 1939; born in Chattanooga, Tenn., Mar. 22, 1876. He was an executive officer of the International Association of Machinists from 1913 to 1933 when he became director of the Civilian Conservation Corps (q.v.). He was recognized as an authority on labor unions and industrial management.

FIEDLER, (AUGUST) MAX. German musician; died in Stockholm, Sweden, Dec. 9, 1939; born in Zittau, Saxony, Dec. 31, 1859. He conducted the Hamburg Philharmonic Society in 1904 and in 1907 the London Symphony Orchestra. He became conductor of the Symphony Orchestra at Essen in 1916. He directed the New York Philharmonic in 1905-06 and the Boston Symphony Orchestra (1908-12).

FIFE, GEORGE BUCHANAN. American journalist; born in Charlestown, Mass., 1870; died in Flushing, N. Y. C., Mar. 12, 1939. He was managing editor of *Harper's Weekly* (1906-11), literary editor of the *New York Times* (1911) and was with the *New York Evening World* (1912-17; 1920-31). At his death he was with the *New York World's Fair* for 1939.

FINBERG, ALEXANDER JOSEPH. British writer on art; died in London, Mar. 15, 1939; born there in 1866. An art critic for some years, he completed the arrangement of the drawings of the Turner Bequest begun by Ruskin and was a prolific writer on the paintings of Turner, the latest work being *In Venice with Turner* (1930). He lectured on the history of painting at the University of London.

FINCK, HERMAN. British composer and conductor; died in London, Apr. 21, 1939, born there, Nov. 4, 1872. He was musical director of the Palace Theatre (1900-21), of the Theatre Royal, Drury Lane (1922-31), and conductor of the Sunday night concerts at Southport (1933). He composed more than 500 pieces and wrote *My Melodious Memories* (1937).

FITZGERALD, FRANK D(WIGHT), died Mar. 16, 1939.

FLAVELLE, SIR JOSEPH WESLEY. Canadian financier; born in Peterborough, Ont., Feb. 15, 1858; died in West Palm Beach, Fla., Mar. 7, 1939. He was president and chairman of the National Trust Co. Ltd., chairman of the board, Grand Trunk Railway (1920-21), and published *The Toronto Star* (1903-10). During the World War he headed the Imperial Munitions Board and in 1932 was a member of the Royal Commission on Railways and Transportation.

FOKKER, ANTHONY (HERMAN) G(ERARD), died Dec. 23, 1939.

FORD, FORD MADDOX, died June 26, 1939.

FORD, WILLIAM EBENEZER. American mineralogist; born in Westville, Conn., Feb. 18, 1878; died in New Haven, Mar. 23, 1939. He joined the faculty of the Sheffield Scientific School at Yale University in 1900 and after 1920 became professor of mineralogy. He edited new editions of *Dana's Manual of Mineralogy* and *Dana's Text Book of Mineralogy*.

FOSS, EUGENE NOBLE. American manufacturer and politician; died in Boston, Sept. 13, 1939. See N. I. ENCY., Vol. IX, p. 74.

FRANCE, JOSEPH IRWIN. American physician and senator; born in Cameron, Mo., Oct. 11, 1873; died in Port Deposit, Md., Jan. 26, 1939. Dr. France was elected Republican Senator from Maryland in 1917 and opposed American membership in the League of Nations and ad-

vocated recognition of Soviet Russia. He was defeated for re-election in 1923.

FRANCIS, JOSEPH M. American Protestant Episcopal Bishop; born in Eaglesmead, Pa., Apr. 6, 1862; died in Indianapolis, Ind., Feb. 13, 1939. Ordained in 1886, he did parish work until about 1888 when he went to Japan as a missionary. He returned in 1897 and two years later was consecrated Bishop of Indiana. He was vice chairman of the House of Bishops in 1934.

FRANK, TENNY. American classical scholar; born in Clay Center, Kans., May 19, 1876; died at Oxford, England, Apr. 3, 1939. Appointed professor of Latin at Johns Hopkins University in 1918, Dr. Frank was the first to hold the Eastman visiting professorship at Oxford University (1938-39). An authority on Roman history, he had written extensively on this subject, and was editor of *The American Journal of Philology* and associate editor of *The Classical Quarterly* and *The Classical Review*. During 1928-29 he was president of the American Philological Association.

FRANKLIN, FABIAN. American editor; born in Eger, Hungary, Jan. 18, 1853; died in New York, Jan. 9, 1939. After teaching mathematics at Johns Hopkins from 1879 to 1895, he became editor of the *Baltimore News* and in 1909, associate editor of the *New York Evening Post*, which position he held until 1917. From 1919 to 1922 he was co-editor of *The Review* (later changed to *The Independent* and *The Review*) and during 1922-24 was a contributing editor of *The Independent*. His last-published book was *Nuggets from the Wickersham Report* (1931).

FRANKLIN, P(HILIP) A(LBRIGHT) S(MALL), died Aug. 14, 1939.

FREAR, JAMES A. American lawyer; born in Hudson, Wis., Oct. 24, 1861; died in Washington, May 28, 1939. Republican Congressman from Wisconsin from 1913 to 1933, he held membership on the Ways and Means Committee and Indian Affairs and during the World War was chairman of the House Committee to Investigate War Contracts. He was House leader of the insurgent Republicans, opposed American entrance into the World War, the draft, and high surtaxes, but favored the payment of the soldiers' bonus.

FREE, EDWARD ELWAY. American scientist; died in New York, Nov. 24, 1939; born in Daguer Mines, Pa., May 3, 1883. Associated with the Department of Agriculture during 1906-12, thereafter he became head of the E. E. Free Laboratories, New York, as a consulting chemist and physicist. He edited *Scientific American* (1924-25) and was owner and editor of *The Week's Science*. His researches dealt particularly with fertilizers, acoustics, and ultra-violet rays.

FREUD, SIGMUND, died Sept. 22, 1939.

FRIEDLANDER, ALFRED. American medical educator; born in Cincinnati, O., July 5, 1871; died there, May 28, 1939. Associated with the University of Cincinnati from 1910, he was professor of medicine after 1919 and dean of the College of Medicine from 1934. He saw service in the World War and wrote *Hypotension* (1927).

FRIESEKE, FREDERICK CARL. American painter; died at Mesnil-sur-Blangy, Normandy, France, Aug. 28, 1939. See N. I. ENCY., Vol. IX, p. 290 and N. I. SUPP., Vol. I, p. 605. In March, 1938, a show of his work was held in New York City.

FRIITSCH, GEN. BARON WERNER VON, died Sept. 22, 1939.

FULDA, LUDWIG. German Jewish playwright; died in Berlin, Mar. 30, 1939. See N. I. ENCY., Vol. IX, p. 338 and N. I. SUPP., Vol. I, p. 606. He received the French Legion of Honor in 1933, and after 1936 was dropped from the Prussian Academy of Arts. One of his latest works was *Die Karriere* (1932).

FULTON, JOHN ALLAN. American mining engineer; died in San Francisco, Oct. 9, 1939; born in Reno, Nev., Sept. 24, 1878. He was director of the Mackay School of Mines of the University of Nevada after 1924 and director of the Nevada State Bureau of Mines after 1929. He was an unsuccessful Republican nominee for governor in 1938.

FUTRALL, JOHN CLINTON. American educator; died in Fayetteville, Ark., Sept. 12, 1939; born in Jackson, Tenn., Mar. 9, 1873. Associated with the University of Arkansas from 1894 as professor of Latin, he served as its president after 1914.

GALES, WESTON S. American musician; died in Portsmouth, N. H., Oct. 21, 1939; born in Elizabeth, N. J., Nov. 5, 1877. In 1914 he founded the Detroit Symphony Orchestra and was its conductor until 1917.

GAMBOA, FEDERICO. Mexican diplomat; died in Mexico City, Aug. 15, 1939, where he was born Dec. 22, 1864. In the diplomatic service from 1888 to 1913, he was ambassador to Spain in 1910, and during 1913-14 he was secretary of foreign affairs in the cabinet of President Huerta. In 1934 he published *Mi diario, mucho de mi vida y algo de la de los otros*. See SPANISH-AMERICAN LITERATURES, Mexico, Necrology.

GARDNER, ERNEST ARTHUR. British archaeologist; died at Maldenhead, November, 1939; born in London, 1862. Interested in archaeology from 1884, he served as director of the British School of Archaeology at Athens (1887-95)

and as Yates professor of archaeology at University College, London from 1886 to 1929. He worked mostly in Greece and one of his latest works was *The Art of Greece* (1925).

GARDNER, HENRY BRAYTON. American economist; died in Providence, R. I., Apr. 22, 1939. See N. I. ENCY., VOL. IX, p. 468. Founder of the economics department at Brown University, he was appointed first Eastman Professor of Political Economy there in 1919 and was retired as emeritus in 1928. He aided in the organization of the Brown Bureau of Business Research in 1922.

GARTH, THOMAS RUSSELL. American psychologist; died in Denver, Colo., Apr. 20, 1939; born in Paducah, Ky., Dec. 24, 1872. Associated with the University of Denver from 1922, he was a member of the Rockefeller Hookworm Investigation (1912), of the University Race Commission (1920), and during 1936-37 was a specialist with the U.S. Indian Bureau. He wrote *Race Psychology* (1931) and *Educational Psychology* (1937).

GASTER, MOSES. British Jewish scholar; died while motoring from Oxford to Reading, Mar. 5, 1939. See N. I. ENCY., VOL. IX, p. 503. He retired as chief rabbi of the Sephardic communities in England in 1919, but continued his activities in Jewish organizations. He was a prolific writer on educational, philological, and historical subjects.

GATES, MILO HUDSON, died Nov. 27, 1939.

GAY, FREDERICK PARKER. American pathologist; professor of pathology (1910-21) and of bacteriology (1921-23) at the University of California, and professor of bacteriology at College of Physicians and Surgeons, Columbia University thereafter. His researches were primarily in the action of sulfanilamide in streptococcus infection, typhoid fever, leprosy, and sleeping sickness. Born in Boston, Mass., July 22, 1874; died in New Hartford, Conn., July 14, 1939.

GEBBIE, SIR FREDERICK. British irrigation engineer; born in Buenos Aires, Aug. 7, 1871; died in Buckland, Surrey, Mar. 20, 1939. An engineer from 1893, he was chairman of the Nile Projects Commission, 1920; Inspector-General of Irrigation in India in 1921, and consulting engineer to the Government of India from 1923 to 1925 when he retired. He was knighted in 1925.

GHIAZI I, died Apr. 4, 1939.

GHERARDI, WALTER R. American rear admiral; died in Bohemian Grove, Calif., July 24, 1939; born in Honolulu, H. I., Aug. 9, 1875. Entering the U.S. Navy in 1894, after service during the World War he was promoted to rear admiral in 1930, and was commander of the First Naval District and Navy Yard, Boston (1935-38) and thereafter, president of the General Court-Martial, Twelfth Naval District, San Francisco.

GHUZZANI, SIR ABDELKERIM. Moslem political leader, representative of East Bengal and Assam in Imperial Legislative Council (1909-12), and Bengal in the Viceroy's Council (1913-16), and a member of the executive council of the Governor of Bengal (1929-34); born Aug. 25, 1872; died in Calcutta, India, July 24, 1939.

GIBBONS, FLOYD (PHILLIPS). American war correspondent; died in Saylorsburg, Pa., Sept. 24, 1939. See N. I. SUPP., VOL. 1, p. 642. After 1927 he served as a radio commentator.

GILBERT, NEWTON W. American lawyer; born in Worthington, Ohio, May 24, 1862; died in Santa Ana, Calif., July 5, 1939. After service in Congress (1905-07), he was appointed a judge of the Court of the 1st Instance at Manila in 1906. Until 1913 he was active in Philippine affairs and served as acting Governor during 1912-13.

GILBERT, PRENTISS B. American diplomatist; born in Rochester, N. Y., Oct. 3, 1883; died in Berlin, Feb. 24, 1939. After service in the World War as chief of combat section, Division of Military Intelligence, he became chief of the Division of Political and Economic Intelligence in 1919, and in 1924, chief of the Division of Western European Affairs of the Department of State in Washington. In 1930 he served at the American Embassy in Paris, and from 1930 to 1937, he was the U.S. Consul at Geneva, acting as liaison officer to the League in connection with American affairs. Mr. Gilbert was the first representative of the United States on the Council of the League of Nations. In 1937 he was appointed counselor at the American Embassy in Berlin. After the recall of the Ambassador in November, 1938 he was in charge.

GILMAN, LAWRENCE, died Sept. 8, 1939.

GILMOUR, SIR ROBERT GORDON. British brigadier general; born Feb. 27, 1857; died in Edinburgh, June 24, 1939. He entered the army in 1878 and saw service during the Boer War and the World War. He was Grand Master Mason of Scotland (1916-20), president of the Scottish Unionist Association (1925-26). He was knighted in 1926.

GINORI-CONTI, PIERO, PRINCE OF TREVIGNANO. Italian scientist; died in Rome, Dec. 4, 1939; born in 1865. A Senator after 1919, he founded the Società Boracifera di Larderello (1912) and the Boron and Silicium Compounds Experimental Institute at Florence. His researches dealt with the utilization of volcanic steam as a source of power.

GOODIER, ALBAN, S.J. British Roman Catholic clergyman; died in Teignmouth, Mar. 13, 1939. Born Apr. 14, 1868, he entered the Society of Jesus in 1887, was ordained in 1903, and in 1914 went to India as rector of St. Xavier's University College in Bombay. In 1919 he was appointed Archbishop of Bombay, retiring in 1926.

GOODNOW, FRANK JOHNSON, died Nov. 15, 1939.

GORDON, SIR CHARLES BLAIR. Canadian financier, president of the Bank of Montreal from 1927 and associated with numerous financial and industrial organizations; born in Montreal, Nov. 22, 1867; died there, July 30, 1939. During the World War he served on the Imperial Munitions Board of Canada (1916) and was director general of war supplies for Great Britain in Washington (1917).

GORE, JAMES HOWARD. American scientist; born in Frederick Co., Va., Sept. 18, 1856; died at Friendship Hts., Md., June 10, 1939. He was associated with Columbian, now George Washington, University from 1878 to 1909 as professor of mathematics and thereafter as emeritus. He was United States delegate to six international congresses and wrote several books on geodesy.

GOUDGE, HENRY LEIGHTON. British theologian; born in Canonbury, Eng., Dec. 21, 1866; died at Barton-on-Sea, Apr. 24, 1939. Ordained a priest of the Church of England in 1891, he was principal of the Ely Theological College (1911-21), when appointed professor of New Testament Interpretations at King's College, London. In 1923 he was made canon of Christ Church, Oxford and Regius Professor of Divinity at Oxford University. He wrote extensively on religious subjects, his last work being *The Church of England and Reunion* (1938).

GOULD, CARL F. American architect; born in New York, Nov. 24, 1873; died in Seattle, Wash., Jan. 4, 1939. In 1914 he established the department of architecture at the University of Washington, was professor in charge until 1926, and architect for many of its buildings. From 1925 to 1930 he was a member of the Civic Planning Commission of Seattle.

GOYAU, (PIERRE LOUIS THEOPHILE) GEORGES. French historian, died at Bernay, France, Oct. 25, 1939. See N. I. SUPP., VOL. 1, p. 654. He served as professor of history at the Institut Catholique in Paris after 1927 and as a professor at the Academy of International Law at The Hague after 1925. His later works include *Le catholicisme* (1931), *L'église et la guerre* (1934), *Mère Marie de la Passion* (1935).

GRANDCENT, CHARLES HALL. American educator; died in Cambridge, Mass., Sept. 11, 1939; born in Dorchester, Mass., Nov. 14, 1862. Professor of Romance Languages at Harvard University from 1896, he was chairman of the department from 1899 to 1911, and in 1932 was retired as emeritus. He was president of the Simplified Spelling Board from 1912 and was the author of several text books.

GRANGER, ALFRED HOYT. American architect; died in Roxbury, Conn., Dec. 3, 1939; born in Zanesville, Ohio, May 31, 1867. Among the many works he designed were Euclid Heights, Cleveland; La Salle St. Station and Chicago & Northwestern Railway terminal, St. Luke's Hospital, Home for Incurables, all in Chicago; Union Station, Omaha; Hospital Building for the Soldiers' Home, Washington; and buildings at the universities of Indiana and Illinois. He wrote *Spirit of Vienna* (1936).

GRANGER, AMÉDÉE. American radiologist; died in New Orleans, Dec. 15, 1939; born there, Mar. 23, 1879. He began the practice of medicine in 1901 and served as professor of radiology at Graduate School of Medicine, Tulane University from 1916 to 1931 and thereafter at the Medical Center, Louisiana State University. He was the discoverer of Granger's Sign and Granger's Line, and in 1926 received the gold medal of the Radiological Society of North America.

GRANVILLE, 3d EARL OF, GRANVILLE GEORGE LEVESON GOWER. British diplomatist; died in London, July 21, 1939; born Mar. 4, 1872. He entered the diplomatic service in 1893 and subsequently served as minister to Athens (1917-21), Copenhagen, (1921-26), The Hague (1926-28), and as Ambassador to Belgium (1928-33).

GRAY, CARL RAYMOND, died May 9, 1939.

GREENE, FREDERICK STUART, died Mar. 26, 1939.

GREY, ZANE. American author, died in Altadena, Calif., Oct. 23, 1929. See N. I. SUPP., VOL. 1, p. 684. The author of some 50 books, his last works were *West of the Pecos* (1937), *An American Angler in Australia* (1937), and *Western Union* (1939). His most popular book was *Riders of the Purple Sage* (1912).

GRIFFITH, JAMES SHAW. British Congregational clergyman; president of the Melbourne College of Divinity during 1930-32 and principal of the Congregational College of Victoria, Melbourne, after 1919; died in Victoria, Australia, May 10, 1939; born at Newcastle-on-Tyne, Nov. 21, 1875. During 1931-33 he was president of the Congregational Union of Australia and New Zealand.

GRINNELL, JOSEPH. American zoologist; died in San Francisco, May 29, 1939. See N. I. SUPP., VOL. 1, p. 685.

GRISWOLD, HARRY W. An American Republican congressman from Wisconsin, elected in 1938; born near

West Salem, Wis., May 19, 1886; died in Washington, July 4, 1939.

GROENER, GEN. WILHELM, died May 4, 1939.

GUGGENHEIM, MURRY, died Nov. 15, 1939.

GULICK, JOHN W. American army officer; died in Portland, Me., Aug. 18, 1939; born in Goldsboro, N. C., Nov. 8, 1874. Entering the army in 1898, he became chief of coast artillery with the rank of major general on Mar. 30, 1930, and after 1934 was appointed brigadier general of the line. He was retired on Nov. 30, 1938.

GUTHRIE, HUGH. Canadian politician; died in Ottawa, Nov. 3, 1939; born in Guelph, Ont., Aug. 13, 1866. A Member of Parliament from 1900 to 1935, when he retired, he served in a variety of posts, including that of Solicitor General (1917-20), Minister of Militia and Defence (1920-22 and 1926), Minister of Justice and Attorney General (1930-35), chairman of the Canadian Air Board (1920-22), and chairman of the Board of Railway Commissioners after 1935. He was a delegate to the Imperial Conference, London, in 1930 and headed the Canadian delegation to the League of Nations, Geneva, in 1931.

HAAB, ROBERT. Swiss politician; died in Zurich, Oct. 15, 1939. See N. I. SUPP., VOL. 1, p. 694.

HALL, EMERY STANFORD. American architect; died in Chicago, Dec. 4, 1939; born in Chatsworth, Ill., Nov. 25, 1869. His best known works included the Tabernacle Baptist Church of Chicago; First Baptist Church, Duluth, Minn.; George Williams College, Chicago. He invented the steel asbestos theater curtain and rebuilt several Chicago theaters, including the Haymarket, and Alhambra. From 1906 he edited *Handbook for Architects and Builders*.

HALLIBURTON, RICHARD. American traveler and writer; lost at sea in a typhoon, Mar. 23-24, 1939, while sailing a Chinese junk from Hong Kong to San Francisco; born in Brownsville, Tenn., Jan. 9, 1900. He was noted particularly for his exploits in foreign lands, which included the climbing of the Matterhorn (1921), Mount Olympus (1925), and Popocatepeti (1928); and the swimming of the Hellespont (1925), and the Panama Canal (1928). During 1934-35 he traveled in Russia, Arabia, and Ethiopia. He wrote several books of travel, the most popular being *The Royal Road to Romance* (1925) and *The Glorious Adventure* (1927).

HALLOWELL, ROBERT. American artist; born in Denver, Colo., Mar. 12, 1886; died in New Brighton, S. I. N. Y., Jan. 26, 1939. He was associated with the *Century Magazine* (1910-14), the *American Magazine* (1913-14), and the U.S. Treasury Department (1917-18), and in 1914 was one of the founders of the *New Republic*, with which he was associated until 1925. During 1926-28 he was vice-president of Survey Associates, Inc., and in 1935-36 was assistant to the director of the Federal Art Project, Washington, D. C. The first public exhibition of his work was held in 1924. One of his best-known works is a portrait of John Reed in Adams House, Harvard.

HAMADA, KUNIMATSU. Japanese politician; leader of the Seiyukai, or chief minority party of the Japanese House of Representatives and Speaker of the House from 1934; died in Tokyo, Sept. 7, 1939; born in Miye-Ken, 1868. An opponent of Fascism, he caused the downfall of the Hirota Cabinet in January, 1937.

HAMILTON, II (COLLISTER) ADELBERT. American philologist; born in Savannah, N. Y., Jan. 14, 1870; died in Elmira, N. Y., May 23, 1939. He was successively instructor in Latin and Greek, University of Rochester (1894-96); lecturer in Greek, Bryn Mawr College (1899-1900); professor of classical philology after 1900, and vice-president after 1918, at Elmira College.

HAMMOND, JOHN S., died Dec. 9, 1939.

HANDMAN, MAX S. American economist; died in Ann Arbor, Mich., Dec. 26, 1939; born in Roman, Rumania, Dec. 13, 1885. He was associated with the University of Texas from 1917 to 1931 as professor of sociology and of economics, and after 1931 was professor of economics at the University of Michigan. He was a recognized authority on Latin-American economic problems.

HANKIN, ERNEST HANNURY. British bacteriologist; died in London, Mar. 29, 1939. See N. I. ENCY., VOL. X, p. 658. He had retired from the Indian Government Service.

HARDING, GEORGE FRANKLIN. American politician; born in Chicago, Aug. 16, 1868; died there, Apr. 2, 1939. In 1905 he became president of the Chicago Real Estate Loan and Trust Co., and subsequently chairman of the board of the Consumers Co. He entered politics in 1903 and served as controller of the city of Chicago (1919-23), treasurer of Cook Co. (1926-30), and National Republican committeeman from Illinois in 1936.

HARKER, ALFRED. British petrologist, emeritus reader in petrology at Cambridge University, recipient of Royal Medal of Royal Society (1935), and author of *Metamorphism* (1932); died at Cambridge, July 28, 1939; born in Hull, Feb. 19, 1859.

HARREL, SIR DAVID. Irish politician; born in Mount Pleasant, Down, Ireland, Mar. 25, 1841; died in Bath,

May 12, 1939. He was chief commissioner of the Dublin Metropolitan Police during 1883-93, and in the latter year was appointed under-secretary for Ireland, serving until 1902, when he retired. In 1916 he was appointed one of the lord justices who assumed the duties of Viceroy of Ireland.

HARRIS, LOUIS ISRAEL. American physician; born in Austria, Jan. 27, 1882; died in New York, Jan. 6, 1939. He joined the New York City Board of Health in 1907, subsequently becoming chief of the division of industrial hygiene (1915-17), director, bureau of preventable diseases (1917-26), and commissioner of health (1926-28). He reorganized the department and initiated many reforms in public health procedure.

HATTORI, UNOKICHI. Japanese educator, emeritus professor of Tokio and Keijo Imperial Universities and former president of Keijo Imperial University; author of *Outline of Confucian Ethics, Logics, etc.*; died in Tokio, July 12, 1939; born in Fukushima-Ken in 1867.

HAYASHI, BARON GONSUKE, died June 27, 1939.

HEALD, CHARLES. American railroad executive; died in South Pasadena, Calif., Dec. 1, 1939; born in Baltimore, Md., July 5, 1849. He was president of the New York, Susquehanna & Eastern Railroad (1889), of the Detroit, Lansing & Northern and the Chicago & West Michigan Railroads (1894-1900), and the first president of the Marquette Railroad System (1900-03).

HELLER, EDMUND. American naturalist, died in San Francisco, July 18, 1939. See N. I. SUPP., VOL. 1, p. 717. After serving as assistant curator of mammals at the Field Museum, Chicago, he became director of the Milwaukee Zoological Gardens (1928-35), and thereafter of the Fleishacker Zoo in San Francisco.

HELMLE, FRANK J. American architect of the Bush Terminal Sales Building and 1 Fifth Avenue Building, New York; St. Gregory's Church, Brooklyn, N. Y., and the George Washington Masonic National Memorial, Alexandria, Va.; retired in 1928. Born in Marietta, O., Mar. 5, 1869; died in Port Washington, L. I., July 15, 1939.

HENDERSON, VICE ADM. SIR REGINALD GUY HANNAM. British naval officer; born Sept. 1, 1881; died in Portsmouth, Eng., May 2, 1939. He saw service during the World War, and in 1926 commanded H.M.S. *Furious*, an aircraft carrier. Promoted to rear admiral in 1929 he commanded the Aircraft Carriers during 1931-33, and promoted to vice admiral, he was appointed Third Sea Lord and Controller of the Navy in 1934. He retired Mar. 1, 1939, because of ill health. Admiral Henderson was knighted in 1936.

HESS, WILLY. German violinist, died in Berlin, Feb. 17, 1939. See N. I. ENCY., VOL. XI, p. 243. He retired in 1928.

HILL, ARTHUR EDWARD. American chemist; born in Newark, N. J., Mar. 20, 1880; died in New York, Mar. 16, 1939. One of the country's leading chemists, he was associated with New York University from 1904, as secretary of the school of applied science (1906-20), as director of the chemical laboratory (1912-18), and as professor of chemistry and head of the department after 1912. Also, he was acting dean of the department in 1932, and acting dean of the College of Arts during 1935-36. He wrote on analytical methods and physical chemistry, and was associate editor of the *Journal of the American Chemical Society* during 1923-33.

HODDAY, SIR FREDERICK. British veterinary; died in Droitwich, Eng., June 24, 1939; born in 1870; late principal and dean of the Royal Veterinary College and emeritus professor of surgery there after 1937; also, honorary veterinary surgeon to the King. Editor of the *Veterinary Journal* and Courtenay's *Veterinary Medicine*; knighted in 1933.

HOPKINS, ARTHUR JOHN. American chemist; died in Amherst, Mass., Nov. 10, 1939; born in Bridgewater, Mass., Sept. 20, 1864. Associated with Amherst College from 1894, he became professor of chemistry in 1907 and was retired as emeritus in 1934. He wrote *Alchemy, Child of Greek Philosophy* (1934).

HOPKINS, ELLEN DUNLAP (MRS. AMOS L.). American philanthropist and founder of the New York School of Applied Design for Women in 1891; died in New York, Feb. 3, 1939; born there in 1858. In 1936 she received the Michael Friedsam Gold Medal.

HOUBART, BARON MAURICE. Belgian financier; born in Tournai, Belgium in 1866; died in Brussels, Feb. 1, 1939. From 1919 to 1925 he was a member of the Chamber of Representatives, and during 1925-36 a Senator and Minister of Finance. He was chairman of the Banque de Bruxelles after 1932. He served as Belgian expert with the Dawes Committee and while minister of finance was firm in upholding the gold standard.

HOWARD, SIDNEY COE, died Aug. 23, 1939.

HOWARD OF PENRITH, BARON, ESMÉ WILLIAM HOWARD. British diplomat, died at Hindhead, Surrey, Aug. 1, 1939. See N. I. SUPP., VOL. 1, p. 749. He retired as Ambassador to the United States in 1930 and was raised to the peerage. He became foreign secretary of the Royal Geographical Society (1932) and published his memoirs,

Theatre of Life (Vol. I, 1935), and *Life Seen from the Stalls* (Vol. II, 1936).

HOWE, CHARLES SUMNER. American astronomer and educator; born in Nashua, N. H., Sept. 29, 1858; died in Amherst, Mass., Apr. 18, 1939. He became associated with the Case School of Applied Science, Cleveland, in 1889 and was its president (1903-29), and thereafter president emeritus. Dr. Howe was one of the leading astronomers in the United States.

Hsu SHIH-CHANG. President of China during 1918-22; he had served the last Manchu dynasty as well as the Republic; born in Tientsin in 1850; died there, June 4, 1939.

HUANG HSIEN-CHAO. See WONG, HIN.

HÜLGERTH, LUDWIG. Austrian soldier and politician, died in Schloss Rottenstein, Carinthia, Aug. 14, 1939; born in 1875. During the World War he organized the Carinthia Defence Corps and subsequently he commanded the 5th Infantry Regiment in Vienna, retiring as major general in 1927. He commanded the Heimatschutzes in 1928, was commandant-general of the Militia after October, 1936, and served as vice-chancellor in the Schuschnigg Cabinet from November, 1937 to March, 1938.

HULL, WILLIAM ISAAC. American historian; associated with Swarthmore College from 1892, he was professor of history and international relations from 1904 to 1939, when he retired; died in Swarthmore, Pa., Nov. 14, 1939; born in Baltimore, Md., Nov. 19, 1868. His latest book was *William Penn—A Topical Biography* (1937). An ardent pacifist, he advocated total disarmament.

HUMPHREY, ARTHUR L. American manufacturer; president (1919-32), executive director (1932-33), and chairman of the board (1933-36) of the Westinghouse Air Brake Co.; died in Edgewood, Pittsburgh, Pa., Nov. 1, 1939; born in Buffalo, N. Y., June 12, 1860.

HUSIK, ISAAC. American educator; born in Vaseutnez, Russia, Feb. 10, 1876; died in Philadelphia, Mar. 22, 1939. After 1922 he was professor of philosophy at the University of Pennsylvania. Editor of the Jewish Publications Society from 1924 and of the philosophy department of the new edition of the *Standard Jewish Encyclopedia* (1929-33), he wrote on philosophic subjects.

IGLESIAS PANTÍN, SANTIAGO. Puerto Rican labor leader; died in Washington, D. C., Dec. 5, 1939; born in La Coruña, Spain, Feb. 22, 1872. He founded the Free Federation of Workmen in Puerto Rico (1898), and organized the American Federation of Labor there and in Cuba. After 1925 he was secretary of the Pan American Federation of Labor. He served in the Puerto Rican Legislature from 1917 to 1932 when he was elected Resident Commissioner to the U.S. Congress.

INCHCAPE, 2ND EARL OF, KENNETH MACKAY. British industrialist; partner in firm of Mackinnon, Mackenzie & Co., Calcutta, president of the P. and O. Banking Corporation, and a director of the P. and O. Steam Navigation Co.; born Dec. 25, 1887; died near Guildford, England, June 21, 1939.

JACKSON, BYRON H. American roentgenologist; born in Luzerne Co., Pa., Sept. 22, 1873; died in Scranton, May 16, 1939. A pioneer in the use and the development of the X-ray, he served as chief radiologist at Scranton State Hospital for 20 years. In 1931 he was elected president of the Radiological Society of North America.

JACKSON, HENRY EZKIEL. American clergyman and writer; died in New York, Apr. 20, 1939. See N. I. SUPP., VOL. 1, p. 829. He edited *Social Security by Common Law* (1936).

JAGGER, IVAN C. American pathologist; born in East Palmyra, N. Y., Aug. 12, 1889; died in San Diego, Calif., Feb. 16, 1939. He joined the bureau of plant industry, U.S. Department of Agriculture in 1918, becoming senior pathologist. He specialized in the causes and control of diseases of vegetables.

JAPP, SIR HENRY. British engineer; born in Montrose, Scot., June 6, 1869; died in London, Apr. 8, 1939. From 1895 to 1915 he was managing engineer for S. Pearson & Sons, Ltd., of London, and as such had charge of the construction of the Surrey Commercial Docks, the Great Northern & City Railway of London, and the Pennsylvania R. R.'s East River tunnels in New York. After 1915 he became chief engineer of John Mowlem & Co., Ltd. of England. He was knighted in 1918 for his war services as director of production for the British government.

JASPAR, HENRI. Belgian politician, died in Brussels, Feb. 15, 1939. See N. I. SUPP., VOL. 1, p. 842. Over a split in the size of appropriations for fortifications, his ministry fell in May, 1931, and he became minister of finance, serving until 1934, when he served as minister of foreign affairs. On Feb. 9, 1939 he was asked by the King to form a ministry, but was unsuccessful. After 1935 he was a Minister of State.

JOHNSON, FRANK TENNEY. American painter; born near Big Grove, Ia., June 26, 1874; died in Los Angeles, Jan. 1, 1939. His work, noted primarily for vivid portrayals of the old West, was in various collections

throughout the country, and he was the recipient of the Shaw prize of the Salmagundi Club (1923) and the Edgar B. Davis prize (1929). In 1937 he was elected to the National Academy of Design.

JOHNSON, ROYAL. American lawyer, Republican member from South Dakota of the 64th to 72d Congresses (1915-33); voted against the War resolution, but saw service overseas during the World War and was awarded the Distinguished Service Cross and the Order of the Purple Heart; died in Washington, D. C., Aug. 2, 1939; born in Cherokee, Ia., Oct. 3, 1882.

JONES, MORGAN. British politician; born May 3, 1885; died in London, Apr. 23, 1939. Starting as a school-teacher in 1907, he lost his license to teach and was imprisoned because of his opposition to the World War. In 1921 he was elected to Parliament as a Laborite candidate, and was Labor Whip (1923-24), Parliamentary Secretary to the Board of Education (1924; 1929-31), chairman, Select Committee of Public Accounts (1931-38), and member of the Joint Select Committee for Indian Constitutional Reform (1933-34).

JOVANOVIĆ, JOVAN M. Serbian politician; born in 1869; died at Chrid, Yugoslavia, June 20, 1939; a member of the diplomatic corps, he served as Serbian minister to the Court of St. James's during the World War and to the United States, retiring in 1920. Thereafter he was the leader of the Serbian Agrarian party.

JUCH, EMMA. American singer; died in New York, Mar. 6, 1939. See N. I. ENCY., VOL. XIII, p. 7.

KAGAMI, KENKICHI. Japanese industrialist; born in Tokyo in 1868; died there, May 26, 1939. At one time New York representative of the Nippon Yusen Kaisha Line, he was its president from 1929 to 1935 and thereafter chairman of the board of directors. A member of the House of Peers he served in the Cabinet Inquiry Council at Tokyo and was Japanese delegate to the International Chamber of Commerce meeting in Washington in 1931.

KALICH, BERTHA. American actress; died in New York, Apr. 18, 1939. See N. I. ENCY., VOL. XIII, p. 77. She retired in 1926, but in the next year returned to the stage and thereafter devoted herself mostly to Yiddish presentations. Failing eyesight forced her retirement in 1931.

KATO, ADMIRAL KANJI, died Feb. 9, 1939.

KENDALL, WILLIAM CONVERSE. American naturalist; born in Freeport, Me., Apr. 4, 1861; died in Mobile, Ala., Jan. 28, 1939. He was a naturalist with the U.S. Commission of Fish and Fisheries (1889-1921), ichthyologist with the Roosevelt Wild Life Forest Experiment Station (1921-23), and ichthyologist with the U.S. Bureau of Fisheries (1923-32) when he retired. He wrote extensively on ichthyology.

KENNEDY, E. C. British naval officer, lost at sea in sinking of the *Rawalpindi* off Iceland by a German warship on Nov. 23, 1939. He entered the Navy in 1892 and served throughout the World War attaining the rank of Captain. He was retired in 1921 but at the outbreak of the War volunteered for duty and was given command of the *Rawalpindi* of the P. & O. Line, which was armed as a cruiser and commissioned for service on the Northern Patrol. See EUROPEAN WAR under *The War at Sea*.

KENNELLY, ARTHUR EDWIN, died June 18, 1939.

KENNEY, WILLIAM PATRICK. American railroad president; born in Watertown, Wis., Jan. 10, 1870, died in St. Paul, Minn., Jan. 24, 1939. He began his railroad career in 1888 and in 1902 he joined the Great Northern Railway, becoming its president on Jan. 1, 1932.

KENT, JAMES M. Newfoundland jurist; born in Newfoundland in 1872; died at St. John's, June 23, 1939. He was a member of the Newfoundland Parliament from 1904 to 1916, when he was appointed judge of the Supreme Court of Judicature of Newfoundland. He was a special delegate to the Washington negotiations in 1909 which resulted in the questions relating to north Atlantic fisheries being submitted to the Hague Tribunal.

KERR, JOHN BROWN. American railroad official; born in Newburgh, N. Y., Feb. 1, 1851; died in Wainscott, L. I., N. Y., June 25, 1939. He became associated with the Ontario Western Railway in 1881 as its attorney and served as its president during 1913-29.

KEYS, DAVID REID. Canadian philologist and historian, emeritus professor of Anglo-Saxon at University College, University of Toronto, after 1923; consultant in pronunciation for Webster's *New International Dictionary* (2d ed., 1935); died in Toronto, July 11, 1939; born in Louisville, Ky., May 2, 1856.

KIDDER, KATHRYN (MRS. LOUIS K. ANSPACHER). American actress, died in New York, Sept. 7, 1939. See N. I. ENCY., VOL. XIII, p. 216. She was last seen in *All the King's Horses* in 1919.

KING, FREDERICK A. American editor, literary editor of *The Literary Digest* (1909-33); author of *The Dance in America*; died in New York, Oct. 31, 1939; born in Thompsonville, Conn., Feb. 20, 1865.

KING-HARMAN, SIR CHARLES ANTHONY. British colonial administrator, colonial secretary, Mauritius (1893),

administrator, St. Lucia, W. I., (1897-1900), governor, Sierra Leone (1900-04), and high commissioner, Cyprus (1904-11); born Apr. 26, 1851; died in London, Apr. 17, 1939.

KIRKLAND, JAMES HAMPTON. American educator, died in Magnetawan, Canada, Aug. 5, 1939. See N. I. ENCY., VOL. XIII, p. 265. He was retired as chancellor emeritus of Vanderbilt University in 1937 and as president emeritus of the Association of Colleges and Secondary Schools of the Southern States in 1928, which he founded in 1895.

KITTERMASTER, SIR HAROLD BAXTER. British colonial administrator, governor of the Somaliland Protectorate (1926-31), of British Honduras (1932-34), and thereafter, governor and commander-in-chief of the Nyasaland Protectorate; born May 14, 1879; died in Salisbury, Southern Rhodesia, Jan. 14, 1939.

KLIESRATH, VICTOR. American manufacturer; died in Port Washington, L. I., Dec. 21, 1939; born in 1881. Vice-president of the Bendix Aviation Corporation, he was the inventor of several devices used in the automotive and marine industries. Interested in speedboat racing, his boat *Hotsy Totsy* won the Gold Cup in 1930 and 1931.

KORFANTY, WOJCIECH. Polish politician; died in Warsaw, Aug. 16, 1939; born in Kotowice, Silesia, Germany, in 1873. He was a Polish member of the German Reichstag from 1903 to 1912 and of the Prussian Diet from 1903 to 1918. After the World War he was elected to the Polish Sejm serving until 1930. He led the Silesian uprising against Germany in 1920-21, and in 1923 was vice premier of Poland. He edited *Racspopolita* until 1926.

KROLL, WILHELM. German philologist, died at Breslau, Apr. 21, 1939. See N. I. ENCY., VOL. XIII, p. 370. He was retired as professor of classical philology at Breslau University in 1935, and during 1930-31 was visiting professor at Princeton University. His later works include *Die Kultur der ciceronischen Zeit* (1933) and *Die Antike Rhetorik* (1937).

KRUPSKAYA, NADEJDA K., died Feb. 27, 1939.

KUNDT, GEN. HANS, died Aug. 28, 1939.

KUSHAKIAN, HIS BEATITUDE THOROM. Armenian Patriarch of Jerusalem from 1931; died in Jerusalem, Feb. 10, 1939; born in 1874.

LADD, ANNA COLEMAN (MRS. MAYNARD LADD). American sculptor; died in Santa Barbara, Calif., June 3, 1939. See N. I. SUPP., VOL. 1, p. 890.

LAEMMLE, CARL, died Sept. 24, 1939.

LAMBERT, ALEXANDER. American physician; born in New York, Dec. 15, 1861; died there, May 9, 1939. He was professor of clinical medicine at Cornell University Medical College (1898-1931), attending physician at Bellevue Hospital (1894-1933), and chairman of the board of Doctors Hospital (1930). During the World War, Dr. Lambert was medical head of the American Red Cross in France, and in 1919 he served as president of the American Medical Association. During 1928-30, he was chairman of the N. Y. State Narcotic Commission.

LANGDON, WILLIAM H. American jurist; died in Hillsborough, Calif., Aug. 10, 1939; born in Alameda Co., Calif. Sept. 25, 1873. As district attorney of San Francisco (1906-10), he figured in the graft prosecutions that led to the removal of several city officials; in 1915 he was made judge of the superior court, in 1919 presiding justice of the District Court of Appeals, and in 1927 an associate justice of the Supreme Court of California.

LANGSDORFF, HANS. German naval officer, a suicide in Buenos Aires, Dec. 20, 1939; born in Rügen, Mar. 20, 1894. He entered the German Navy in 1912, rose to the rank of captain, and in October, 1938, was given command of the "pocket battleship" *Admiral Graf Spee*. In a battle with English cruisers off the coast of South America, the *Spee* was defeated and then scuttled. For details, see *EUROPEAN WAR under War at Sea*.

LA TERZA, ERMENEGILDO. Italian Orientalist; died in Naples, Nov. 6, 1939; born in Putignano, Italy, 1866. After teaching from 1895, he was president of the Naples Reale Liceo de Scienza during 1924-32, and thereafter was professor of Indo-European philology and Sanscrit. His publications include *La Religione del Rigveda* (1921), *Compendio di grammatica delle lingue indoeuropee* (1923), *Inni scelti del Rigveda: commenti e tradotti* (1924), and *Lessico etimologico dell'antico indiano* (1926).

LATIMER, REAR ADMIRAL JULIAN LANE, U.S.N., RET., died June 4, 1939.

LAUBEUF, MAX. French naval engineer; died at Cannes, Dec. 23, 1939; born in Poissy in 1864. A constructor of submarines from 1888 to 1933, during 1900-06 he was constructor-in-chief of the French Navy. He wrote *Sous-marins, Torpilles et Mines* (1923).

LAURENT, CHARLES. French banker and diplomatist; born in Paris, Nov. 12, 1856; died there, Feb. 18, 1939. After holding posts in the finance ministry (1893-1907), he was appointed financial adviser to the Turkish government in 1908. Subsequently he became president of

the Banque des Pays du Nord and of the Confédération Générale de la Production Française. He was the first French ambassador to Berlin after the War, serving during 1920-22. At his death he was vice-president of the Suez Canal Co.

LAVELLE, THE RT. REV. MGR. MICHAEL J., died Oct. 17, 1939.

LAWSON, ERNEST. American landscape painter, drowned at Miami Beach, Fla., Dec. 18, 1939. See N. I. ENCY., VOL. XIII, p. 657. Elected a National Academician in 1917, his "Vanishing Mists" was awarded the 1st Altman Prize of the National Academy and the first prize of the Carnegie Institute in 1921, and in 1928, his "Hills in Winter" received the 1st Altman Prize. He was awarded the Saltus gold medal in 1930.

LAY, JULIUS GARECH. American diplomatist; died at Pride's Crossing, Mass., Aug. 28, 1939; born at Washington, D. C., Aug. 9, 1872. In the foreign service from 1889, he was envoy extraordinary and minister plenipotentiary to Honduras (1930-34) and to Uruguay (1934-37). In 1935 he was a delegate to the Pan-American Commercial Conference.

LEDERER, EMIL, died May 29, 1939.

LEE, FREDERICK SCHILLER, died Dec. 14, 1939.

LEE, JOHN YU-BONG (LI YAO-PANG). Chinese scientist; born in Canton in 1884; died in Shanghai, Apr. 20, 1939. Educated in the United States, he taught at the University of Chicago, and in 1917 returned to China, where he became professor of physics at Southeastern University, Nanking. In 1930 he was appointed technical expert of the Ministry of Industry, Commerce, and Labor. During 1921-30 he was secretary of the national committee of the Chinese Young Men's Christian Association.

LE SIDANER, HENRI. French painter, 1st prize winner of the 24th Carnegie International Exhibition in 1925 for "Window on the Bay of Villefranche"; chief works, "La Table"; "Barques au crépuscule"; "La bénédiction de la mer, Le Grand Canal"; member of Académie des Beaux-Arts after 1930; died in Paris, July 17, 1939; born in Port Louis, France, Aug. 7, 1862.

LESLIE, AMY. (MRS. LILLIE WEST BROWN-BUCK). American dramatic critic for the Chicago *Daily News* from 1890 to 1930 when she retired. She wrote *Some Players and Plays and Players*. Born in West Burlington, Ia., Oct. 11, 1860; died in Chicago, July 3, 1939.

LEVETZOW, MAGNUS VON. German naval officer; in the navy from 1889, he saw service during the World War and at its end was chief of staff of the naval command at General Headquarters; a member of the Nationalist Socialist Party he was Police Prefect of Berlin during 1933-35 and subsequently a Prussian State Counsellor; died in Berlin, Mar. 13, 1939; born in Flensburg, Jan. 8, 1871.

LEVI, GERSON B. American rabbi; born in Glasgow, Scotland, Jan. 23, 1878; died in Chicago, Feb. 14, 1939. He was rabbi at Temple Israel (1906-24) and Temple Isaiah-Israel (1924-37), both in Chicago, and during 1923-37 was editor of *The Reform Advocate*.

LEVY-BRUHL, LUCIEN. French philosopher; born in Paris, Apr. 10, 1857; died there Mar. 13, 1939. He was professor at the Sorbonne, 1899 to 1927; editor of *Revue Philosophique de la France et de l'Étranger*, and after 1917, member of the Académie des Sciences Morales et Politiques. He was French exchange professor at Harvard University in 1918. His latest work was *L'expérience mystique et les symboles chez les primitifs* (1938).

LEWIS, JAMES HAMILTON, died Apr. 9, 1939.

LEWIS, ROBERT. American oto-rhinologist; died in New York, Dec. 20, 1939; born there Mar. 8, 1862. A specialist in rhinology and otology from 1892, he was professor of clinical otolaryngology at the College of Physicians and Surgeons from 1908 to April, 1939, when he was retired as emeritus. He was president of the American Otological Society in 1920.

LEWIS, SAMUEL. Panamanian lawyer; born in Panama City, Sept. 22, 1871; died there, Apr. 17, 1939. An authority on Panamanian affairs, he was a member of the Mixed Claims Commission to adjudicate claims growing out of the Panama Canal (1907, 1912-15), secretary of Foreign Affairs (1909-10), a member of the organizing committee of the Bolivian Congress (1926), and for many years an editorial writer on *Estrella de Panama*.

LILJEFORS, BRUNO. Swedish painter; died in Stockholm, Dec. 18, 1939. See N. I. ENCY., VOL. XIV, p. 146.

LINDEMANN, FERDINAND VON. German mathematician; died in Munich, Mar. 7, 1939. See N. I. ENCY., VOL. XIV, p. 170. He was retired as professor emeritus.

LINDGREN, WALDEMAR. American geologist, died in Brookline, Mass., Nov. 3, 1939. See N. I. ENCY., VOL. XIV, p. 171. He was retired as professor emeritus at Massachusetts Institute of Technology in 1933. He served as president of the Geological Society of America in 1924, and in 1937 the Geological Society of London awarded him the Wollaston Medal, the highest international honor in mineralogy.

LINEBARGER, PAUL M. W. American lawyer; born in Warren, Ill., June 15, 1871; died in Washington, Feb. 20, 1939. He served as a U.S. judge in the Philippines from 1901 to 1907 when he resigned to become legal adviser to Sun Yat Sen, serving until 1925. During 1930-37 he was legal adviser to the Chinese Nationalist Government. He founded and edited the *Chinese Nationalist* and wrote extensively on Chinese affairs, including *Sun Yat Sen and the Chinese Republic* (1924); *The Gospel of Sun Chung Shan* (1932), etc.

LIHN, JAMES WEBER American educator; died at Lakeside, Mich., July 16, 1939; born in Winnebago, Ill., May 11, 1876. A member of the faculty of the University of Chicago for 40 years, in 1938 he was elected a State Representative. Besides the textbook, *Essentials of English Composition* (1912), he wrote a life of his aunt, *Jane Addams, A Biography* (1935).

LINTON, EDWIN American zoologist and professor emeritus of geology and biology at Washington Jefferson College (1882-1920). An authority on fish parasites, he received the Leidy medal of the Philadelphia Academy of Natural Sciences in 1937. Born in East Bethlehem, Pa., Mar. 14, 1855; died in Philadelphia, June 4, 1939.

LIPMAN, JACOB GOODALE, died Apr. 19, 1939.

LI YAO-PANG. See **LEE, JOHN YIUBONG**.

LOBINGIER, ANDREW STEWART American surgeon; born in Laurelville, Pa., Dec. 22, 1862; died in Los Angeles, July 31, 1939. He practiced medicine in Colorado from 1889 to 1902, and thereafter in California; also, he was on the faculty of University Hospital, University of Colorado (1892-1902) and the University of Southern California. One of the founders of the American College of Surgeons, he was the author of a life of Dr. John Jones, "Father of American Surgery."

LOGAN, MARVEL MILLS American Democratic Senator from Kentucky from 1931; died in Washington, D. C., Oct. 3, 1939; born in Brownsville, Ky., Jan. 7, 1874. Previous to his election to the Senate he served on the Kentucky Court of Appeals from 1926, and as chief justice during 1930-31. An advocate of the majority of New Deal measures, he was ranking Democratic member of the Senate military committee, was chairman of the claims committee, and a member of the judiciary committee. In the summer of 1939 he was chief sponsor of the so-called Logan bill to regulate many government agencies and commissions and to review their rules and decisions. He favored the repeal of the arms embargo.

LORD, BERT American congressman; born in Afton, N. Y., in 1870; died in Washington, May 24, 1939. He served in the N. Y. State Assembly (1915-22, 1924-29) and Senate (1929-35), as motor vehicle commissioner of the State of New York (1921-23) and as a Republican member of Congress from 1935. He was a member of the Agriculture and Library Committees.

LOUIS, HENRY British engineer; died in Newcastle, Feb. 22, 1939. See N. I. ENCY., Vol. XIV, p. 397. After 1923 he was emeritus professor of mining at Armstrong College, Durham University. He was a past president and Bessemer medalist of the Iron and Steel Institute and had acted as a delegate at many important engineering conferences. His latest work was *Mineral Deposits* (1934).

LOUISE CHARLOTTE ALBERTA, H.R.H. PRINCESS, British princess, the fourth daughter and sixth child of Queen Victoria and the Prince Consort Albert; born in London, Mar. 18, 1848; died there, Dec. 3, 1939. In 1871 she was married to the Marquess of Lorne who, during 1878-83 was Governor General of Canada.

LOVEJOY, THOMAS E. American insurance executive, president of the Manhattan Life Insurance Co. of New York from 1913; died in Scarsdale, N. Y., Dec. 12, 1939; born in Spalding, Ga., Sept. 16, 1875.

LOVELL, JOHN HARVEY American biological editor of *The ABC of Bee Culture* and contributor to New England newspapers; author of *Plant Life and Pollination* (1918) and *The Honey Plants of North America* (1926); born in Waldboro, Me., Oct. 21, 1860; died in Sanford, Me., Aug. 2, 1939.

LUNN, SIR HENRY (SIMPSON) British peace advocate; born at Horncastle, Linc., July 30, 1859; died in London, Mar. 18, 1939. In 1926 he announced the formation of the Sir Henry Lunn Trust Foundation to administer his property to promote unity among churches and concord among nations. He was an advocate of the League of Nations, and in 1923 convened the Murren Conferences of Bishops, Clergy, and leading Nonconformists on Clause 13 of the Lambeth Report (1923). He edited *Review of the Churches* (1891-97, 1923-30), took an active part in the union of the Churches, lectured in the United States, and was the author of *The Log of Sir Henry Lunn* (1934) and *A United Christian Front* (1938). He was knighted in 1910.

LYNCH, JOHN ROY American lawyer; died in Chicago, Nov. 2, 1939; born in slavery in Concordia Parish, La., Sept. 10, 1847. He was Republican Congressman from Mississippi from 1873 to 1877 and again from 1881 to 1883; temporary chairman of the Republican National Convention in 1884; and served in the Spanish-American War.

LYONS, CHARLES W., S.J. American Roman Catholic educator; born in Boston, Mass., Jan. 31, 1868; died in Dorchester, Mass., Jan. 31, 1939. He joined the Society of Jesus in 1890, was ordained priest in 1904, and served as president of Gonzaga College (1808-09), St. Joseph's College (1909-14), Boston College (1914-18), and Georgetown University (1924-28).

LYONS, JOSEPH ALOYSIUS, died Apr. 7, 1939.

MACCARTHY, HAMILTON T. C. P. Canadian sculptor, died in Ottawa, Oct. 24, 1939. See N. I. ENCY., Vol. XIV, p. 542.

MCCAW, WALTER DREW American army officer; died in Kingston, N. Y., July 7, 1939; born in Richmond, Va., Feb. 10, 1863. In the army from 1884, he served as chief surgeon of the American Expeditionary Forces from 1918 to 1919 and was promoted to brigadier general assistant surgeon general, U.S.A. on Mar. 5, 1919. He retired Feb. 10, 1927.

MCCORMICK, JOHN N. American Protestant Episcopal clergyman; died in Grand Rapids, Mich., Nov. 26, 1939; born in Richmond, Va., Feb. 1, 1863. Ordained to the Methodist Episcopal ministry in 1884, ten years later he became a priest of the Protestant Episcopal Church and after holding various pastorates was consecrated bishop coadjutor of the diocese of Western Michigan in 1906. On Mar. 19, 1909 he succeeded to the bishopric. He retired in 1937. He wrote *A Small Part* (1933).

MCDONALD, THOMAS E. American lawyer; died in Waco, Tex., Dec. 7, 1939; born in Erin, Tex., Sept. 3, 1893. From 1925 to 1935 he was professor of law at Baylor University, Waco, and was dean of the law school after 1937.

MACDOUGALL, ROBERT American psychologist, professor of psychology at New York University from 1901 to 1935, and professor emeritus thereafter; died in Montclair, N. J., Oct. 31, 1939; born in Dewittville, Que., Canada, June 12, 1866. He wrote *General Problems of Psychology*.

MC ELROY, HENRY F. American politician, city manager of Kansas City, Mo., from 1926 to April, 1939, when he resigned. A month later he was indicted for alleged misuse of public funds. Died in Kansas City, Sept. 15, 1939; born in Amboy, Ill., Aug. 17, 1865.

MACHADO RUIZ, ANTONIO. See **SPANISH LITERATURE, Necrology**.

MACHADO Y MORALES, GERARDO, died Mar. 29, 1939.

MACKAY, WILLIAM ANDREW American painter; born in Philadelphia, Pa., July 10, 1876; died in New York, July 27, 1939. His work included the decorations of the ceiling of the U.S. Senate Reading Room and murals in the N. Y. State Roosevelt Memorial Building.

MACKENZIE, MURDO American stockman; born in Ross Co., Scotland, Apr. 24, 1850; died in Denver, Colo., May 30, 1939. He came to the United States in 1885 and was associated with the Matador Land & Cattle Co., Ltd., during 1891-1911 and 1922-37, when he retired. He served as president of the Cattle Raisers' Association of Texas (1901-02) and of the American National Live Stock Association (1904-11).

MCMECHAN, FRANK H. American editor; born in Cincinnati, Ohio, Jan. 16, 1879; died in Cleveland, Ohio, June 29, 1939. An authority on anesthetics, he founded and edited the *Quarterly Supplement of Anesthesia and Analgesia of the American Journal of Surgery* in 1914 and the *Journals of the International Research Society and Current Researches in Anesthesia and Analgesia* in 1922.

MCMILLAN, JOHN British Salvation Army officer; died in London, Sept. 22, 1939; born in Glasgow, Scotland in 1873. In 1937 he was appointed Chief of Staff of the Salvation Army. Previously, during 1930-34, he was in command of the Eastern Territory of the United States with headquarters in New York City.

MCMILLAN, THOMAS American Democratic Congressman from South Carolina (1925-39); died in Charleston, S. C., Sept. 29, 1939; born in Ulmers, S. C., Nov. 27, 1888. He served on various House committees.

McMURRICH, (JAMES) PLAYFAIR Canadian anatomist; died Feb. 9, 1939. See N. I. ENCY., Vol. XIV, p. 603. In 1930 he was retired as professor emeritus of anatomy at the University of Toronto, and from 1922 to 1930 was dean of the School of Graduate Studies there. He served as president of the American Association for the Advancement of Science (1922), of the Royal Society of Canada (1922), and as chairman of the Biological Board of Canada (1926-34). His latest work was *Leonardo da Vinci, Anatomist* (1930).

McREYNOLDS, SAM (UEL) DAVIS American Democratic Congressman from Tennessee from 1923; born near Pikeville, Tenn., Apr. 6, 1872; died in Washington, July 11, 1939. A member of the Foreign Relations Committee from 1925 and its chairman after 1933, he introduced the Administration Neutrality Bill in 1936 and led the fight for various amendments and modifications to it thereafter.

MAHER, STEPHEN JOHN American physician and authority on tuberculosis, died in New Haven, Conn., June 6, 1939; born there, Apr. 12, 1860. In practice from

1888, he served as chairman of the Connecticut Tuberculosis Commission for 28 years and was U.S. government representative at the International Tuberculosis Conferences of 1924, 1928, 1930, 1932, and 1937. In 1932 he was awarded the Laetere Medal of Notre Dame University.

MAHONEY, BERNARD JOSEPH. American Roman Catholic Bishop; born in Albany, N. Y., July 24, 1875; died in Rochester, Minn., Mar. 20, 1939. Ordained in 1904, he served as spiritual director of the North American College in Rome from 1909 until his appointment as bishop of Sioux Falls, S. D., June 29, 1922.

MA HSIANG-PAI. Chinese government officer and scholar, died in Lingshan, Kwangsi Province, Nov. 4, 1939; born in Chinkiang, Kiangsu in 1839. One-time commissioner to the United States and to Korea, he founded Aurora University and Fuhtan College and had served as president and professor at the latter. He wrote *History of Ning-Hsing* (Spiritualism).

MANGUM, CHARLES STAPLES. American anatomist; died in Chapel Hill, N. C., Sept. 29, 1939; born in Greensboro, N. C., July 14, 1870. Associated with the University of North Carolina from 1896, he was professor of anatomy from 1905 and during 1933-37 served as dean of the School of Medicine.

MAPES, CARL. American Congressman, Republican member from Michigan of the 63d to 73d Congresses (1913-39); died in New Orleans, La., Dec. 12, 1939; born in Eaton Co., Mich., Dec. 26, 1874.

MARIANI, DOMENICO. Italian Roman Catholic prelate; born in Posta, Apr. 3, 1863; died in Vatican City, Apr. 23, 1939. Elevated to the College of Cardinals by Pius XI, on Dec. 16, 1935, he served as provost to the commission for the administration of the estates of the Holy See.

MARKS, LOUIS B. American illuminating engineer, designer of lighting for the Great Hall of City College and the Post Office, New York and a wing of the Library of Congress, Washington, etc., and inventor of the enclosed arc lamp in 1893; died in New York, Nov. 22, 1939; born there, Jan. 25, 1869. He was a founder and first president of Illuminating Engineering Society (1906).

MARSHALL, SIR WILLIAM RAINE. British soldier; born Oct. 29, 1865; died in France, May 29, 1939. He entered the army in 1886 and saw service in India; South Africa; during the World War (1914-18) in France, at Gallipoli, at Salonika, in Mesopotamia, and during 1917-18 was general officer commanding in charge of the Mesopotamia Expeditionary Force, after which he was promoted to lieutenant-general. He served as General Officer Commanding in Charge of the Southern Command in India from 1919 to 1923 and retired in the following year. He wrote *Memoirs of Four Fronts* (1929).

MARTIN, EDWARD SANDFORD. American editor, died in New York, June 13, 1939. See N. I. ENCY., VOL. XV, p. 149. He relinquished his association with *Life* in 1933 and with *Harper's Weekly* in 1931, but contributed "The Easy Chair" in the latter during 1920-35. His last published book was *What's Ahead, and Meanwhile* (1927).

MARTIN, HELEN REIMENSnyder (Mrs. Frederic C.). American novelist, died in New Canaan, Conn., June 29, 1939. See N. I. ENCY., VOL. XV, p. 150 and N. I. SUPP., VOL. 2, p. 986. Her latest work was *Emmy Untamed* (1937).

MARTIN, JOHN A. American lawyer; Democratic Congressman from Colorado (1909-13; 1933-39); died in Washington, Dec. 23, 1939; born in Cincinnati, O., Apr. 10, 1868. A staunch New Dealer, he was a member of the committee on appropriations.

MARX, CHARLES DAVID. American civil engineer, professor of civil engineering at Stanford University from 1891 to 1923, when he was retired as emeritus; died in Palo Alto, Calif., Dec. 31, 1939; born in Toledo, Ohio, Oct. 10, 1857. He was supervisor of the experimental arch dam built near Fresno, Calif., by the Engineering Foundation during 1925-26.

MASON, WALT. American columnist with the *Emporia (Kans.) Gazette* from 1907. His poems appeared in more than 200 newspapers and were collected under various titles. Born in Columbus, Ont., Canada, May 4, 1862; died in La Jolla, Calif., June 22, 1939.

MATTHEWS, CALVIN B. American marine officer, died in Washington, Aug. 30, 1939, born in Loudon, Tenn., Sept. 10, 1882. He entered the U.S. Marine Corps in 1904 and was raised to the rank of brigadier general in 1938 and his last post was as president of the examining board of the Marine Corps.

MATTHEWS, JAMES JOSEPH EDMUND, O.S.B. British Roman Catholic clergyman, Abbot of Ampleforth after 1924; died in Ampleforth, Apr. 7, 1939; born, Jan. 22, 1871. He entered the Benedictine Order in 1888, was ordained in 1896, and was headmaster of Ampleforth College during 1903-24.

MAX, ADOLPHE. Belgian politician, Mayor of Brussels from 1909, hero of the German occupation of that city (1914); died in Brussels, Nov. 6, 1939; born there, Dec. 31, 1869.

MAV, HENRY JOHN. British economist; died in London,

Nov. 19, 1939; born there in 1867. He was secretary of the Parliamentary Committee of the Co-operative Congress from 1908 to 1922 and president of the Congress after 1929. Also, he was secretary of the International Co-operative Alliance from 1913 and edited *International Co-operation Review* from its founding in 1925.

MAYO, CHARLES HORACE. died May 26, 1939.

MAYO, EARL OF, WALTER L. BOURKE. British engineer; born Nov. 28, 1859; died at Maidenhead, Berks., May 7, 1939. He was associated with the construction of the Forth Bridge and the Manchester Ship Canal, and was trustee and superintendent of Bridgewater Estates (1891-1903). During 1937-38 he was president of the College of Estate Management.

MAYO, WILLIAM J. died July 28, 1939.

MELIÁN LAPINUR, LUIS. See SPANISH-AMERICAN LITERATURES, URUGUAY, Necrology.

MELLANBY, JOHN. British physiologist, after 1936 Waynflete Professor of Physiology at Oxford University and member of Medical Research Council; former editor of *Physiological Abstracts*; died at Oxford, July 15, 1939; born in West Hartlepool, Eng., in 1878.

MERCER, BERYL. British actress; on the stage from 1886 to 1927, her best known roles were as Mrs. Dowey in *The Old Lady Shows Her Medals* (1918) and Mrs. Midgett in *Outward Bound* (1924); thereafter she appeared in motion pictures, died in Santa Monica, Calif., July 28, 1939; born in Seville, Spain, Aug. 13, 1882.

MERRICK, LEONARD. British writer; died in London, Aug. 7, 1939. See N. I. SUPP., VOL. 2, p. 1003. His latest work was a collection of short stories, *The Little Dog Laughed*, published in 1930.

MERRIMAN, THADDEUS. American engineer; died in New York, Sept. 26, 1939; born in New Haven, Conn., Apr. 6, 1876. With the Board of Water Supply of the City of New York from 1905, in 1933 he retired as chief engineer. Until 1936 he was in private practice and had served as a consultant on many important waterway problems in the United States, including the Fort Peck project and the Tennessee Valley Authority. Thereafter he was consulting engineer to the Board of Water Supply of New York on the construction of the Delaware River Aqueduct for New York. He was editor in chief of the American Civil Engineers' *Handbook*.

MERRIVALE, BARON, HENRY EDWARD DUKE. British lawyer; born in 1855; died in London, May 20, 1939. Called to the bar in 1885 he served in Parliament (1900-06, 1910-18), and in 1915 was made attorney-general to the Prince of Wales. Thereafter he was chief Secretary (1910-18) for Ireland during the Easter Rebellion of 1916, president, Probate Divorce and Admiralty Courts (1919-33), and Wreck Commissioner (1935). He was knighted in 1925.

MESTRE, HAROLD. American biologist; died at Annandale-on-Hudson, N. Y., Sept. 9, 1939; born at Mamaroneck, N. Y., Aug. 16, 1884. After teaching at Stanford University (1928-33), he joined the faculty of Bard College, Columbia University in 1937, and in 1938 was named dean.

MEYENS, GEORGE J. American naval officer; died on the U.S.S. *Argonne* off San Pedro, Calif., Dec. 7, 1939; born in Council Bluffs, Ia., Apr. 10, 1881. He entered the Navy in 1898 and was advanced through the grades to rear admiral in December, 1935. At his death he was commander of the Base Force, U.S. Fleet.

MILLER, FRED J. American industrial engineer; died in Trenton, N. J., Nov. 26, 1939; born in Yellow Springs, O., Jan. 3, 1857. Editor-in-chief of *The American Machinist* (1897-1907), he was general manager of the Union Typewriter Co., factories (1909-18). President of the American Society of Mechanical Engineers in 1920, he received the Gantt Medal in 1929.

MILLER, JOHN F. American industrialist; died at Goshen, N. Y., Sept. 17, 1939; born in Port Perry, Pa., Feb. 28, 1859. Associated with the Westinghouse Air Brake Co., from 1899, he was its president during 1916-19 and vice chairman of the board of directors thereafter.

MILLER, KELLY. American sociologist, professor of sociology and dean of the College of Arts and Sciences at Howard University from 1889 to 1926, when he was retired as emeritus; died in Washington, Dec. 29, 1939; born at Winstonsboro, S. C., July 23, 1863.

MILLER, WILLIAM SNOW. American anatomist; died in Madison, Wis., Dec. 26, 1939; born in Stirling, Mass., Mar. 29, 1858. Associated with the University of Wisconsin from 1892, he was retired as emeritus professor of anatomy in 1924. A member of many scientific societies, he received the Trudeau Medal in 1934, and was the author of *The Lung* (1937).

MITCHELL, DOBSON LOMAX. American actor; on the stage from 1885, he appeared with John Drew, Julia Marlowe, Arnold Daly, Alla Nazimova and his last role was with Walter Hampden in *An Enemy of the People* (1938); born in Memphis, Tenn., Jan. 23, 1868; died in New York, June 2, 1939.

MOFFETT, SAMUEL. American Presbyterian missionary; died in Monrovia, Calif., Oct. 24, 1939; born in Madison,

Ind., Jan. 24, 1864. Ordained in 1888, he became a missionary in Korea in 1889, serving until 1935 when he retired. He was a member of the faculty of the Presbyterian Theological Seminary in Korea (1902-35), president of the Seminary (1902-24), and president of Union Christian College (1918-28).

MONDELL, FRANK WHEELER. American lawyer; died in Washington, D. C., Aug. 6, 1939. See N. I. SUPP., VOL. 2, P. 1041.

MONROE, WILLIAM S. (EYMOUR). American psychologist; died in Burlington, Vt., Jan. 29, 1939. See N. I. ENCY., VOL. XVI, P. 168. He retired as professor of psychology at the N. J. State Normal School on Apr. 1, 1925. His latest work was *Edward Carpenter—An Appreciation* (1931). In 1918 he was a member of President Wilson's Peace Commission.

MOORE, HUGH KELSEA, died Dec. 18, 1939.

MOORE, OWEN. American actor, appeared in leading roles in motion pictures after 1910 but in recent years was seen only in "bit" parts. He was married to Mary Pickford in 1911 but the marriage ended in a divorce in 1920. Died in Beverly Hills, Calif., June 7, 1939; born in 1887.

MOOREHEAD, WARREN KING. American archeologist; died in Boston, Jan. 5, 1939. See N. I. ENCY., VOL. XVI, P. 230. He was particularly interested in Indian affairs and served on the U. S. Board of Indian Commissioners from 1907 to 1933. He explored the Cahokia Mounds for the University of Illinois (1920-23; 1927), and investigated the Etowah mounds in Georgia (1925-27).

MORGAN, JAMES HENRY. American educator; died in Carlisle, Pa., Oct. 17, 1939; born in Concord, Del., Jan. 21, 1857. Associated with Dickinson College from 1884, he served as its president during 1915-28, 1931-32, and 1933-34. He wrote *History of Dickinson College* (1933).

MOQUERA NARVAEZ, AURELIO, died Nov. 17, 1939.

MOULAN, FRANK. American actor; born in New York, July 24, 1875; died there, May 13, 1939. On the American stage from 1897, he was best known for his roles of the Lord Chancellor in *Iolanthe*, Sir Joseph Porter in *Pinafore*, and Major General Stanley in *The Pirates of Penzance*, in which he appeared from 1931 to 1936.

MOUNT TEMPLE, BARON, WILFRID WILLIAM ASHLEY. British politician; born Sept. 13, 1867; died in Romsey, Hamps., July 3, 1939. He was elected a Conservative Member of Parliament in 1906, in 1918, and in 1922. After service during the World War, he became parliamentary secretary in the Ministry of Transport (1922-23), under-secretary of State for War (1923-24), Minister of Transport (1924-29). He was President of the Anglo-German Fellowship from 1935 to 1938 when he resigned in protest against German treatment of the Jews.

MUNDELEIN, GEORGE WILLIAM, CARDINAL, died Oct. 2, 1939.

MYERS, ARTHUR WILLIS. British tennis authority; born at Kettering, July 24, 1878; died at Epsom, June 16, 1939. After 1909 he was associated with the *Daily Telegraph* and for over 20 years he was lawn tennis editor of *Field*. He founded the International Lawn Tennis Club of Great Britain in 1924 and was the author of many works on tennis, including *The Complete Lawn Tennis Player* (1908; 5th ed.).

NAISMITH, JAMES A., died Nov. 28, 1939.

NATHAN, SIR MATTHEWS. British politician; died in West Coker, Somerset, Apr. 18, 1939; born, Jan. 3, 1862. He held various administrative colonial posts, including the governorships of the Gold Coast (1900-03), Hong Kong (1903-07), Natal (1907-09), and Queensland (1920-26).

NEUMANN, HEINRICH. Austrian otologist; died in New York, Nov. 6, 1939; born in Hethars, Hungary, July 10, 1864. A student of Dr. Adam Politzer, in 1914 he was appointed professor at the University of Vienna and director of the University Ear, Nose, and Throat Clinic. He was arrested by the Nazi Government on Mar. 15, 1938 but later was released, and in July, 1938 he attended the conference of the Intergovernmental Refugee Committee at Evian, France. He was in the United States in connection with the refugee problem at his death. He wrote *Der Otische Kleinhirnsatz* (1907).

NICHOLL, SIR EDWARD. British shipowner, founder, and managing director of the Cardiff Hall Line and the Nicholl Steamship Co., Ltd.; born June 17, 1862; died in Putney, England, Mar. 30, 1939. Knighted in 1916, he served in Parliament during 1918-22 and founded the Edward Nicholl Home for Waifs and Strays in Cardiff in 1921.

NICHOLSON, REGINALD F. American naval officer; died in Washington, Dec. 19, 1939; born there, Dec. 15, 1852. He entered the navy in 1880 and rose through the ranks to the grade of admiral, becoming commander in chief of the Asiatic Fleet (1912-14). He was then retired but was recalled to active duty during 1918-20.

NICOLAS V. (NICOLAS EVANGELIDES). The Greek Orthodox Patriarch of Alexandria; born in Janina, Albania in 1876; died in Alexandria, Egypt, Mar. 3, 1939. Elected Patriarch on Feb. 11, 1936, he was the head of an autocephalous unit of the Eastern Orthodox Church.

NIEMEROVER, JACOB. Rumanian Jewish theologian; died in Bucharest, Nov. 18, 1939; born in Lemberg, Austria in 1872. He served as rabbi of the Jassy Jewish Community (1896-1911), of the Spanish Mosaic Community of Bucharest (1911-21), and as chief rabbi of the Old Kingdom Provinces of Rumania thereafter. He was a member of the Senate.

NIMMO, SIR ADAM. Scottish industrialist, chairman, and managing director of Jas. Nimmo & Co., Ltd., and of other industrial organizations; ex-president of Mining Association of Great Britain; died in Drymen, Scotland, Aug. 10, 1939; born in 1867.

NOE, ADOLPH CARL. American paleobotanist; born in Gratz, Austria, Oct. 28, 1873; died in Chicago, Apr. 10, 1939. He joined the faculty of the University of Chicago in 1903, and in 1924 was made associate professor of paleobotany. He was a member of the Illinois Geological Survey after 1921, of the Kentucky Geological Survey in 1922, and a member of the Allen & Garcia Coal Commission to Soviet Russia in 1927. An authority on coal and coal fossils, he was the author of *Ferns, Fossils, and Fuels* (1931).

NORMAN, SIR HENRY. English engineer, journalist; died in Chiddingfold, Surrey, June 4, 1939. See N. I. ENCY., VOL. XVII, P. 205. In 1912 he was a member of the War Office Committee on Wireless Telegraphy which investigated charges that a monopoly had been granted to the Marconi interests, and in 1920 he was chairman of the Imperial Wireless Telegraphy Committee to draw up a system of radio control for England. Until 1923 he was a member of the House of Commons. His latest work was a play, *Will No Man Understand?* (1934).

NORTON, CHARLES LAUD. American physicist; died at Annisquam, Mass., Sept. 8, 1939; born at Springfield, Mass., Dec. 11, 1870. Associated with the Massachusetts Institute of Technology from 1893, he was director of the Division of Industrial Co-operation and Research after 1921. An inventor and engineer of note, he was a pioneer in fire prevention work.

O'BRIEN, JOHN F. American jurist, associate justice of the N. Y. State Supreme Court of Appeals (1927-41); died in New York, Dec. 25, 1939; born in Watertown, N. Y., June 13, 1874. He wrote many important decisions, including one that denied the Transit Commission the power to change the New York City 5-cent fare. He had sent in his resignation to take effect Dec. 31, 1939.

OGLIVIE, ALBERT G. Australian politician; born in Hobart, Tasmania, Mar. 10, 1891; died in Melbourne, June 10, 1939. Elected to Parliament in 1919, he served in various Labor governments and after 1929 was head of that party. He became Premier of Tasmania (without Portfolio) in 1934.

OGLIVIE GORDON, DAME MARIE M. British geologist, died at London, June 24, 1939. See N. I. ENCY., VOL. XVII, P. 383. Her work was done mostly in the Tyrol and her latest work was *Geology of Cortina d'Ampezzo and Cadore* (1934). In 1932 she received a medal and a grant from the Lyell Geological Fund.

OKELL, CHARLES CYRIL. British bacteriologist; born in 1888; died in Cambridge, Feb. 8, 1939. At one time bacteriologist of the Wellcome Physiological Laboratories, he was at his death professor of bacteriology in the University of London College Hospital Medical School. He was Milroy lecturer at the Royal College of Physicians in 1932 and editor of the *Journal of Hygiene*.

OLGIN, MOISSAYE J. American Communist, founder (1922) and editor-in-chief of *The Morning Freiheit*, a Yiddish Communist daily, and a member of the national committee of the Communist Party in the United States; died in New York, Nov. 22, 1939; born in Kiev, Russia in 1878.

OLIPHANT, FERMAN, died Jan. 11, 1939.

OMAN, J. (JOHN) WOOD. British Presbyterian clergyman, professor of systematic theology (1907-35) and principal (1922-35) of the Theological College of the Presbyterian Church of England; died at Cambridge, May 17, 1939; born at Stennes, Orkney, in 1860. During 1931-32 he was moderator of the General Assembly of the Presbyterian Church of England.

ORAM, SIR HENRY. British naval officer; born at Plymouth, June 19, 1858; died at Cranleigh, May 5, 1939. Entering the navy in 1879, he was engineer-in-chief of the British fleet from 1907 to 1917 with the rank of vice-admiral. Knighted in 1910, he was Watt medalist of the Institute of Civil Engineers, and received the American Distinguished Service Medal.

ORTEIG, RAYMOND. American hotel proprietor; died in New York, June 6, 1939; born in Louvie-Juzon, France in 1870. After 1902 he acquired the Lafayette and Brevoort hotels in New York, but retired in 1929. In 1927 Charles A. Lindbergh won the prize of \$25,000 offered by Mr. Orteig in 1919 for the first transatlantic flight.

O'SHAUGHNESSY, EDITH COUES (MRS. NELSON). American writer; died in New York, Feb. 18, 1939. See N. I. SUPP., VOL. II, P. 1153. Her latest works were *Other Ways and Other Flesh* (1929) and *Marie Adelaide* (1929).

O'SHEA, WILLIAM J. (AMES), died Jan. 16, 1939.

OTANI, SONYU. Chief abbot of the Honganji sect of Japanese Buddhists until June, 1937, when he became minister of overseas affairs in the Konohe cabinet; in the following year he became president of the North China Development Co.; died at Kalgan, China, Aug. 1, 1939.

OWEN, EMMETT M. American lawyer; Democratic member of Congress from Georgia (1933-39); born in Hallonville, Ga., 1877; died in Washington, D. C., June 21, 1939.

OWEN, SIR JAMES GEORGE. British publisher, editor, and managing director of Western Times Co., Ltd. and managing director of Hawkins & Son, Ltd.; mayor of Exeter (1914-19); deputy chairman of Reuters, Ltd., (1928); managing director, *Devon and Exeter Gazette* (1932); died in Exeter, July 8, 1939; born Aug. 29, 1869.

PADDOCK, THE RT. REV. ROBERT LEWIS, died May 17, 1939.

PAIS, ETTORE. Italian historian; died in Rome, Mar. 28, 1939. See N. I. ENCY., VOL. XVII, p. 718. A member of the Italian Senate, he had formerly been professor of history at Palermo, Pisa, Naples, and Rome universities. His latest work was *Storia di Roma durante la guerra Punica* (1935).

PALMA Y VELASQUEZ, RAFAEL. Filipino educator; born in Tondo, Manila, Oct. 24, 1874; died in Manila, May 24, 1939. From 1898 to 1904 he edited various papers, was professor of law at Escuela de Derecho (1901-05), representative to the first Philippine Assembly (1907), a member of the Philippine Commission (1908-16), of the Senate (1916-21); secretary, Department of the Interior (1917-20), and president of the University of the Philippines (1923-34).

PALMER, CHARLES S. American chemist, the inventor of a basic process for cracking oils to gasoline in 1900, which was patented in 1916 as of 1907 and sold to the Standard Oil Co. of Indiana; died in Pittsburgh, Nov. 30, 1939; born in Danville, Ill., Aug. 4, 1858. Dr. Palmer defined the chemical terms in *Webster's International Dictionary* (1890); translated Nernst's *Theoretical Chemistry* (1895); was professor of chemistry at the University of Colorado (1887-1902), president of the Colorado School of Mines (1902-03), an associate editor of *Engineering and Mining Journal* (1904-06), and a fellow of the Mellon Institute of Industrial Research, University of Pennsylvania (1915-17).

PANCOAST, GEORGE E. American engineer, died in Brooklyn, N. Y., Mar. 15, 1939; born in Manchester, N. H., Feb. 28, 1862. Associated with the Hearst organization for 51 years, at his death he was mechanical director and chief engineer of the Hearst newspapers. He was known for his invention of many devices for the improvement of newspaper presses.

PANCOAST, HENRY KHUNRATH. American roentgenologist; born in Philadelphia, Feb. 26, 1875; died in Merion, Pa., May 20, 1939. Associated with the University of Pennsylvania from 1898, in 1912 he was appointed professor of Röntgenology at the University and Röntgenologist to the University Hospital. Also, he was consulting roentgenologist at several hospitals, and president of the American Röntgen Ray Society (1913) as well as other scientific organizations.

PANZINI, ALFREDO. Italian writer; died in April, 1939; born in 1863. A member of the Royal Italian Academy, his works included *Dizionario moderno*, *Il padrone sono me!*, *La sventurata Irminda*, *Legione Decima*, *Viaggio con la ane ebraica*, *Il bacio di Lesbia*.

PARK, WILLIAM HALLOCK, died Apr. 6, 1939.

PARKER, JOHN M. American politician; born in Bethel Church, Miss., Mar. 16, 1863; died at Pass Christian, Miss., May 20, 1939. Vice-presidential nominee on the Progressive ticket in 1916; Democratic governor of Louisiana, 1920-24, during his administration the power of the Ku Klux Klan was broken in that State and the State University removed to a new location. He was flood relief director of Louisiana in 1912, 1922, and 1927.

PARRA LEÓN, CARACIOLO. See SPANISH-AMERICAN LITERATURES, *Venezuela*, Necrology.

PATRICK, HUGH T. American neurologist; born in New Philadelphia, O., May 11, 1860; died in Chicago, Jan. 5, 1939. He was professor of nervous and mental diseases at the Chicago Policlinic after 1896 and professor of the same at Northwestern University from 1898 to 1912, when he retired as emeritus. He served as president of the American Neurological Society in 1907 and was one of the founders of the *Archives of Neurology and Psychiatry*.

PAYSON, WILLIAM FARQUHAR. American author and publisher; born in New York, Feb. 18, 1876; died there, Apr. 15, 1939. He was president of Payson & Clarke, Ltd., publishers during 1924-28, editor of *The Field* (1928-29), and after 1931 was president of William Farquhar Payson, Inc., publishers. His latest work was a novel, *Give Me Tomorrow* (1935).

PEARODY, CHARLES. American archaeologist, curator of European archaeology at the Peabody Museum, Harvard University from 1913 to 1921, when he retired; died in Paris, Aug. 17, 1939; born in Rutland, Vt., Nov. 9, 1867.

PEARSON, ALFRED J. American educator; died in Des

Moines, Ia., Aug. 10, 1939; born in Landskrona, Sweden, Sept. 29, 1869. He was appointed professor of German language and literature at Drake University in 1907, where he remained until named envoy extraordinary and minister plenipotentiary to Poland in 1924, and to Finland in 1925. Upon his return in 1930 he became dean of the College of Liberal Arts at Drake University. His latest work was *The Land of a Thousand Lakes* (1932).

PEARSON, HENRY G. American educator, head of the department of English and history at Massachusetts Institute of Technology from 1919 to 1938. A contributor to the *Dictionary of American Biography*, his latest work was *Richard Cockburn MacLaurin*, President of the Massachusetts Institute of Technology (1937). Died in Boston, Dec. 28, 1939; born in Portland, Me., Dec. 26, 1870.

PEARSON, RAYMOND ALLEN. American educator; born in Evansville, Ind., Apr. 9, 1873; died in Hyattsville, Md., Feb. 13, 1939. He was president of Iowa State College of Agriculture and Mechanical Arts (1912-26) and of the University of Maryland (1926-35), when he became special assistant to the administrator of the U.S. Farm Security Administration. Known for his work in agricultural research, he was co-ordinator for the FSA in its work with land-grant colleges.

PEDREIRA, ANTONIO S. Puerto Rican educator; died in San Juan, P. R., Oct. 23, 1939; born there, June 13, 1899. Associated with the University of Puerto Rico from 1921, he became director of the department of Hispanic studies there in 1927. Also, he taught at Columbia University and the Brooklyn Institute of Arts and Sciences during 1926-27. He was co-director and founder of the *Revista Indice* (1929-31), and his *Bibliografía Puertorriqueña* (1932) is a standard work. See SPANISH-AMERICAN LITERATURES, *Puerto Rico*, Necrology.

PHILIP, SIR ROBERT W. Scottish physician; born in Dec. 29, 1857; died in Edinburgh, Jan. 25, 1939. An indefatigable worker for the eradication of tuberculosis, he founded in 1887 the first Tuberculosis Dispensary and aided in the establishment of the Royal Victoria Hospital for Consumption. For his work in this field he was knighted in 1913, awarded the Trudeau Medal of the National Tuberculosis Association in 1928, and elected president of the British Medical Association in 1927. Also, he was professor of tuberculosis and examiner in medicine at the University of Edinburgh.

PIUS XI (ACHILLE AMBROGIO DAMIANO RATTI), died Feb. 10, 1939.

PLATT, EDMUND. American banker; died in Chazy, N. Y., Aug. 27, 1939; born in Poughkeepsie, N. Y., Feb. 2, 1865. He served in Congress from 1913 to 1920 when he resigned to become a member of the Federal Reserve Board. He was vice governor until 1930 when he accepted the vice-presidency of the Marine Midland Corporation.

PLUMB, CHARLES SUMNER. American agricultural scientist; born in Westfield, Mass., Apr. 21, 1860; died in Columbus, O., Mar. 4, 1939. From 1902 to 1931 he was professor of animal husbandry at Ohio State University, when he was retired as emeritus. He was one of the world's leading authorities on sheep and had written extensively on the subject.

PLUNKETT, CHRISTOPHER J., C.S.Sp. American Roman Catholic priest; died in New York, Aug. 17, 1939; born in Dublin, Ireland in 1867. Joining the Congregation of the Holy Ghost, he was ordained in 1893. He established the first Catholic church for Negroes in Philadelphia and St. Mark's the first in New York (1912-31), and during 1931-33 he was stationed at a mission in Puerto Rico. Thereafter he became provincial for his order in the United States.

POND, IRVING KANE. American architect; died in Washington, D. C., Sept. 29, 1939; born in Ann Arbor, Mich., May 1, 1857. Associated with his brother from 1886, the firm was the architect for Hull House and Chicago Commons, and several university buildings. During 1910-11 he was president of The American Institute of Architects, and in 1918 he published *The Meaning of Architecture*.

POOLE, REGINALD LANE. British librarian and historian; died in Oxford, Dec. 28, 1939. See N. I. ENCY., VOL. XIX, p. 41 and N. I. SUPP., VOL. 2, p. 1278. After 1933 he was an honorary fellow of Magdalen College, Oxford. His latest work was *Studies in Chronology and History* (1934).

POPE, SIR WILLIAM JACKSON, died Oct. 17, 1939.

PORTER, ALFRED W. British physicist; born on Nov. 12, 1863; died in London, Jan. 11, 1939. Formerly professor of physics at University College, London, after 1928 he was emeritus professor at the University of London. He served as president of the Röntgen Society (1913-14) and of the Faraday Society (1920-22), wrote numerous papers on physical chemistry, heat, light, etc., and was co-editor of the *London, Edinburgh and Dublin Philosophical Magazine*.

POWERS, SIR CHARLES. Australian jurist; born in Brisbane, Mar. 3, 1853; died in Melbourne, Apr. 25, 1939. In public life from 1888, he was a justice of the High Court of Australia from 1913 to 1929, and President of

the Commonwealth Court of Conciliation and Arbitration, 1921-26. He was knighted in 1929.

POWERS, T(OMAS) E. American political cartoonist, associated with the Hearst newspapers from 1896 until his retirement in 1937; died in Long Beach, L. I., N. Y., Aug. 14, 1939; born in Milwaukee, Wis., July 4, 1870.

POWYS, LEWELLYN. British author; died at Davos Platz, Switzerland, Dec. 2, 1939; born in Dorchester, Dorset, Aug. 13, 1884. After working as a stock farmer in Kenya (1914-19), he served as a journalist in New York City until 1925. A lecturer and critic, his works included *Ebony and Ivory* (1922); *Thirteen Worthies* (1923); *Black Laughter* (1924), his best-known work; *Skin for Skin* (1925); *Glory of Life* (1934), *Life and Death* (1938).

PRATT, HAROLD IRVING. American financier; born in Brooklyn, N. Y., Feb. 1, 1877; died in Glen Cove, L. I., May 21, 1939. Head of the banking firm of Charles Pratt & Co., he also was interested in many other financial organizations, and was a supporter of the Young Men's Christian Association, Pratt Institute, Brooklyn Hospital, and North Country Community Hospital in Glen Cove.

PRATT, WALDO S. American author and hymnologist; born in Philadelphia, Nov. 10, 1857; died in Hartford, Conn., July 29, 1939. Active in the musical world for many years, he was associated with the Hartford Theological Seminary from 1882 and was retired as emeritus professor of public worship in 1925. He was music editor of the *Century Dictionary* (1892-1909), wrote the article "Music" in the *International Encyclopedia* (1891), and was the editor of *American Supplement to Grove's Dictionary of Music and Musicians* (1920) and *New Encyclopedia of Music and Musicians* (1924).

PRICE, IRA MAURICE. American Orientalist, died near Olympia, Wash., Sept. 18, 1939. See N. I. ENCY., VOL. XIX, p. 197. After 1925 he was retired as professor emeritus. He contributed to *The Jewish Encyclopedia* and the *Standard Bible Dictionary* (new ed., 1926) and similar publications; was on the staff of the *Assyrian Dictionary* of the Oriental Institute, University of Chicago (1932), and was the author of a number of books on the Bible, including *The Dramatic Story of Old Testament History* (1929, 2d ed., 1935).

PRITCHETT, HENRY SMITH, died Aug. 28, 1939.

PRYSTOR, ALEXANDER. Polish politician, reported to have committed suicide at Wilno, Sept. 20, 1939; born in Wilno in 1870. A close collaborator of Marshal Pilsudski, he was minister of Labor in 1929 and 1930, minister of industry and commerce (1930-31), prime minister (1931-33), and marshal of the Senate after 1935.

PUG CASAUARANC, JOSE MANUEL. Mexican diplomat; born in Ciudad del Carmen, Jan. 31, 1888; died in Havana, Cuba May 9, 1939. He was a member of the Mexican Congress (1912, 1922) and Senate (1924) and served as minister of education, minister of industry and commerce, and in 1931 was appointed ambassador to the United States. In the following year he was made foreign minister, and in 1935 he became minister to the Argentine. He retired in 1936. He headed the Mexican delegation to the 7th Pan American Conference in Uruguay in 1933.

PUJO, ARSENSE PAULIN. American lawyer and ex-Congressman; died in New Orleans, La., Dec. 31, 1939. See N. I. ENCY., VOL. XIX, p. 360. He retired in 1913.

PULTIZER, RALPH, died June 14, 1939.

RACKHAM, ARTHUR. British illustrator; died in Limpsfield, Surrey, Sept. 6, 1939. See N. I. ENCY., VOL. XIX, p. 464. His later works included the illustration of *The Legend of Sleepy Hollow* (1928), *Andersen's Fairy Tales* (1932), *The Pied Piper of Hamelin* (1934), *Peter Gynt* (1936), etc.

RADZIWIŁŁ, PRINCE JANUSZ. A leader of the Polish National Conservative party, whose death at Olyka, in Wolhynia was announced on Oct. 3, 1939. Born in Berlin, Sept. 3, 1880, he was elected to the Sejm in 1928. He headed the Polish Red Cross.

RAMSAY, SIR WILLIAM MITCHELL. British archaeologist; died at Bournemouth, Eng., Apr. 20, 1939. See N. I. ENCY., VOL. XIX, p. 537. He was Rede Lecturer at Cambridge (1906) and Romanes Lecturer at Oxford (1913). His last work was *The Social Basis of the Permanence of the Roman Empire* (Pt. I, 1938).

RANK, OTTO. Austrian psychologist; died in New York, Oct. 31, 1939; born in Vienna in 1884. Associated with Sigmund Freud, (q.v.) for 20 years, he left him in 1925 to further his own technique, which emphasized the importance of the conscious. He was editor, during 1912-24, of *Imago and Internationale Zeitschrift für Psychoanalyse*, and in 1919 founded the International Psychoanalytic Institute in Vienna. He was a prolific writer, his works including *Arts and Artists* (1932), *Modern Education* (1932), *Truth and Reality* (1936), and *Will Therapy* (1936).

RAO, SIR SAYAJI, H. H. MAHARAJA GAEKWAR OF BARODA. Born, Mar. 10, 1863; died in Bombay, Feb. 6, 1939. He succeeded to the title in 1875 but was not invested until 1881. During the World War he made large contributions to the Allied cause, including Rs500,000 for

aeroplanes and Rs1,500,000 for the purchase of vans. He was an Indian representative at the Imperial Conference in 1937 and attended the coronation of King George VI. The Gaekwar was considered one of the more enlightened of the Indian rulers and he introduced many reforms, including compulsory education.

RASKOLNIKOV, FEDOR FEDOROVITCH (ILIIN). Russian politician; announcement of his death in Paris was made on Sept. 23, 1939; born in 1892. A member of the Bolshevik Party from 1910, he took part in the October Revolution of 1917, and subsequently was minister to Afghanistan (1921-23), editor of *Krasnaia Nov* (1924, 1927-30), minister to Estonia (1930-33), to Denmark (1933-34), and to Bulgaria (1934-38). When relieved of his post in April, 1938, he fled to France and was condemned to death *in absentia* by the Moscow Supreme Court.

READ, OPIE. American author, died in Chicago, Nov. 2, 1939. See N. I. ENCY., VOL. XIX, p. 582. His latest novel was *Gold Gause Veil* (1927). In 1930 he published his reminiscences, *I Remember*.

RENSHAW, ALFRED HOWARD. American manufacturer and inventor of the Trojan car coupler and other safety devices; born in Staten Island, N. Y., Nov. 24, 1861; died in Noroton, Conn., June 16, 1939. President, Trojan Car Coupler Co. (1893-1906), and Federal Signal Co. (1908-24); vice-president, General Railway Signal Co. (1923-36), and thereafter chairman of the board of directors.

RHEES, (BENJAMIN) RUSH. American educator; died in Rochester, N. Y., Jan. 5, 1939. See N. I. ENCY., VOL. XIX, p. 761. He was retired as president emeritus of the University of Rochester in 1935.

RHETT, R(OBERT) GOODWYN. American banker; born in Columbia, S. C., Mar. 25, 1862; died in Charleston, Apr. 16, 1939. He entered the banking field in 1896 and when he retired he was chairman of the board of the Peoples State Bank of South Carolina. Mr. Rhett was mayor of Charleston (1904-12) and president of the Chamber of Commerce of the United States (1916-18).

RHINELANDER, PHILIP MERCER. American Protestant Episcopal Bishop of Pennsylvania (1911-23); ordained in 1897; professor at Berkeley Divinity School (1903-07) and at Episcopal Theological School (1907-11); died in Gloucester, Mass., Sept. 21, 1939; born in Newport, R. I. in 1869.

RIANO Y GAYANGOS, JUAN DE. Spanish-American diplomat, Spanish Ambassador to the United States from 1913 to 1926; died in Middletown, R. I., Nov. 18, 1939; born in Madrid, Mar. 24, 1865. After 1926 he became a citizen of the United States.

RICHARDSON, ERNEST CUSHING. American librarian; died in Washington, June 3, 1939. See N. I. ENCY., VOL. XIX, p. 802. In 1920 he became director of the Princeton University Library, in 1923 honorary director and research professor of bibliography, and in 1925 emeritus director, and thereafter, honorary consultant in bibliography and research at the Library of Congress. His later works include *Special Collections in North American Libraries* (1927), *A World Catalog of Manuscript Books* (6 parts, 1933-37), and *Aspects of Cooperative Cataloging* (1933).

RICHARDSON, JAMES ARMSTRONG. Canadian merchant; born in Kingston, Ont., Aug. 21, 1885; died in Winnipeg, June 26, 1939. Associated with the exporting firm of James Richardson & Sons, Ltd., from 1906, becoming president in 1919, he became known as the "grain king of Canada. During the War he was with the Allied Wheat Commission.

RIGHTMYER, FLOYD K. American physicist; died in Ithaca, N. Y., Nov. 7, 1939; born in Cobleskill, N. Y., Oct. 12, 1881. Associated with Cornell University from 1906, he became professor of physics after 1918 and dean of the Graduate School after 1931. An authority on the X-ray, he received the Leavey Medal of the Franklin Institute in 1929, was president of the American Physical Society (1936) and the Optical Society of America (1920), edited the *Journal of the Optical Society of America*, and was the author of the textbook *An Introduction to Modern Physics* (2d ed., 1934).

RIESENBERG, FELIX. American engineer; died in Bronxville, N. Y., Nov. 18, 1939; born in Milwaukee, Wis., Apr. 9, 1879. He served in the U.S. Coast and Geodetic Survey (1906-07), in the Wellman Polar Expedition (1906-07); and as an engineer on the Catskill Aqueduct construction (1912-13), and for the Columbia-Presbyterian Medical Center construction work (1925-27). In 1923, Captain Riesenbergs made a record passage sail from Santa Cruz de Tenerife to New London in 26 days. His books included *Clipper Ships* (1932) and his autobiography, *Living Again* (1936).

RIESENFELD, HUGO. American conductor; died in Los Angeles, Calif., Sept. 10, 1939; born in Vienna, Jan. 26, 1885. He came to the United States in 1907 and was managing director of the Rialto, Rivoli, and Criterion theaters, New York (1917-25) and general musical director of the United Artists Studios, Hollywood, Calif. (1928-30).

RINFRET, FERNAND. Canadian politician; member of Parliament for St. James Division of Montreal after 1920; secretary of state for Canada (1926-30 and 1935-); editor of *Le Canada* (1909-26); died in Los Angeles, Calif., July 12, 1939; born in Montreal, Feb. 28, 1883.

ROBERTSON, HARRISON. American journalist; died in Louisville, Ky., Nov. 11, 1939; born in Murfreesboro, Tenn., Jan. 6, 1856. Associated with the *Louisville Courier-Journal* from 1879, he was its editor-in-chief after 1929.

ROBINSON, ROBERT P. American banker and politician; born in Cristiana Hundred, Del., Mar. 28, 1869; died in Wilmington, Mar. 4, 1939. Associated with the Central National Bank of Wilmington since 1888, he became president in 1916. During 1925-29 he was Republican Governor of Delaware.

RODRIGUEZ, GEN. ANTONIO. Peruvian army officer, killed at Lima, Peru, Feb. 19, 1939 in an effort to overthrow the Benavides government. He was minister of interior in 1935 and minister of government in 1936.

RODRIGUEZ RIVERO, PLACIDO DANIEL. Venezuelan physician; born in San Felipe, Aug. 24, 1876; died in Caracas, Feb. 21, 1939. He served as director of the national department of health (1922-25), as governor of Puerto Cabello (1926-37) and thereafter as rector of the University of Caracas. He edited the *Archivos de Historia Médica de Venezuela* and wrote extensively on medical subjects, his latest work being *La primera trepanación craneana practicada en Venezuela data de 1736* (1932).

ROGERS, JAMES HARVEY, died Aug. 13, 1939.

ROSS, JAMES D. American engineer; born in Chatham, Ont., Nov. 9, 1871; died in Rochester, Minn., Mar. 14, 1939. Superintendent of the municipal power system of Seattle, Wash., from 1903, in 1933 he was given leave of absence to serve with the Public Works Administration (1933-35), the Securities and Exchange Commission (1935-37), and the Bonneville Project of the Columbia River, of which he was administrator (1937-39). He advocated public ownership of utilities.

ROSS, WALTER L. American railway official; born in Bloomington, Ill., Jan. 1, 1865; died in Phoenix, Ariz., Apr. 5, 1939. He became associated with the Toledo, St. Louis & Western Railway in 1904, and when it was merged with the New York, Chicago & St. Louis (Nickel Plate) R. R., he became vice-president, and on Jan. 1, 1927 was elected president. He retired in 1933. At his death he was vice-president of the Detroit & Toledo Shore Line R. R.

ROTH, JOSEPH. Austrian novelist; born in 1894; died in Paris, May 29, 1939. He served as a correspondent for the *Frankfurter Zeitung* and for the *Berliner Boersen Courier*, and published *Hiob* (1930; Eng. trans., *Job*, 1931) and *Radetsky-Marsch* (1932; Eng. trans., *Radetsky-Marsch*, 1933), the latter being well received in the United States.

ROUTLEDGE, SCORESBY. Australian explorer; made, with his wife, an archaeological and ethnological survey of Easter Islands (1913-16; 1920-22); author of *The Mystery of Easter Island* (1916); died in London, July 31, 1939; born in Melbourne in 1859.

RUFFERT, JACOB, died Jan. 13, 1939.

SAAVEDRA, JUAN BAUTISTA. Bolivian politician; born in 1871; died in Santiago, Chile, Mar. 1, 1939. He served as president of Bolivia from 1920 to 1925 and was active in politics until exiled in 1934. He returned in 1935, was deported again in 1936, once more returned, and again in 1937 exiled. He attended the Chaco Peace Conference in Buenos Aires in 1935.

SADLER, LENA KELLOGG (MRS. WILLIAM SAMUEL). American gynecologist; died in Chicago, Aug. 8, 1939; born in Abscota, Mich., June 9, 1875. A physician from 1906, she was associate director of the Chicago Institute of Research and Diagnosis and was gynecologist of Columbus Hospital. With her husband she wrote several books, including *Piloting Modern Youth* (1931) and *The Sex Life Before and After Marriage* (1938).

SARIN, HEINRICH. German diplomatist; died in Oslo, Norway, Oct. 3, 1939; born in Anklam, Pomerania, Sept. 12, 1877. During the Civil Administration of Warsaw during the German Occupation (1915-18), he was a member of the Council, and subsequently was chief burgomaster of Danzig (1919-20), president of the Danzig Senate (1920-31), chief burgomaster of Berlin (1931-36), and thereafter, minister to Norway.

SAITO, HIROSI, died Feb. 26, 1939.

SAMPSON, RALPH A. British astronomer; died in Bath, Nov. 10, 1939; born in Cork County, 1866. After teaching mathematics (1896-1910) and astronomy (1908-10) at Durham University, he was appointed Astronomer-Royal of Scotland, serving until 1937. He published *Tables of the Four Great Satellites of Jupiter*.

SANDERS, NEWELL. American manufacturer; born in Owen Co., Ind., July 12, 1850; died in Chattanooga, Tenn., Jan. 26, 1939. During 1882-1901 and 1915-19 he was president of the Chattanooga Plow Co., and from 1901 to 1927 of the Newell Sanders Plow Co. A member of the Republican National Committee from Tennessee

during 1912-16, during 1912-13 he was a member of the U.S. Senate.

SANDERSON OF HUNMANBY, BARON, HENRY SANDERSON FURNISS. British educator; born in 1868; died in London, Mar. 25, 1939. He was lecturer and tutor in Economics at Ruskin College, Oxford (1897-16) and its principal (1916-25). A member of the Labor Party from his Oxford days, he resigned in 1938, having been a member of the joint committee of both Houses on London Passenger Transport Bill (1931), on Water Resources and Supplies (1935-36), and on Gas Prices (1937). His memoirs, *Memoirs of Sixty Years*, appeared in 1931.

SAPIR, EDWARD. American anthropologist; died in New Haven, Conn., Feb. 4, 1939; born in Pomerania, Germany, Jan. 26, 1884. Associated with the University of Chicago from 1925 to 1931, thereafter he was Sterling professor of anthropology and linguistics at Yale University. His researches dealt with the origin of the American Indian.

SARABIA, FRANCISCO. Mexican aviator, killed in an airplane crash at Washington, D. C., June 7, 1939; born in Lerdo, Mexico in 1900. Head of one of the largest Mexican airlines, he made a record nonstop flight of 10 hours and 47 minutes from Mexico City to New York in connection with the N. Y. World's Fair on May 25. On July 5 he flew to Washington as part of his good will tour, and had started on his return trip when the accident occurred.

SARGENT, JOHN GARIBALDI, died Mar. 5, 1939.

SASSOON, SIR PHILIP. British politician; died in London, June 3, 1939; born Dec. 4, 1888. Unionist Member of Parliament from 1912, during the World War he was private secretary to Sir Douglas Haig, and during 1920-22 to Lloyd George. He served as under-secretary of state for air during 1924-29 and again in 1931-37, and thereafter was first commissioner of works. Noted for his art collection, he served as a trustee of the National Gallery and of the Tate Gallery.

SAUVEUR, ALBERT. American metallurgist; died in Boston, Mass., Jan. 26, 1939. See N. I. ENCY., VOL. XX, P. 491 and N. I. SUPP., VOL. 2, P. 1417. He was retired as professor emeritus at Harvard University in 1935. He was Howe lecturer of the American Institute of Mining and Metallurgical Engineers (1924), Campbell lecturer of the American Society for Steel Treating (1929) and Marburgh lecturer of the American Society for Testing Materials (1938), and in 1934 he received the first award of the Albert Sauveur Achievement Medal of the American Society for Metals.

SBARRETTI, DONATO. Italian Roman Catholic prelate; died in Vatican City, Apr. 1, 1939; born in Montefranche, Italy, Nov. 12, 1856. Ordained in 1879, he was Bishop of Havana in 1900 and Delegate Apostolic to Canada during 1902-10. Named Cardinal-priest in 1916 and Cardinal Bishop of Sabina and Poggio Mirteto in 1928, after 1930 he was secretary of the Sacred Congregation of the Holy Office.

SCAVENIUS, HARALD. Danish diplomatist; born in 1873; died at The Hague, Apr. 22, 1939. Entering the foreign office in 1900, he served as minister of foreign affairs (1920-22), minister to Italy (1923), and to the Netherlands and Switzerland (1928-39).

SCHAFFNER, JOHN HENRY. American botanist; born in Agosta, O., July 8, 1866; died in Columbus, Jan. 27, 1939. He joined the faculty of Ohio State University in 1897 and after 1928 was research professor of botany there. He was the author of many scientific works, including *Field Manual of Trees* (1914, 4th ed., 1936), and was known particularly for his discovery of the chromosome reduction process in plants.

SCHNEIDEMANN, PHILIPP. German Socialist leader, died in Copenhagen, Nov. 29, 1939. See N. I. SUPP., VOL. 2, P. 1421. With the rise of the Nazi Government in 1933 he fled to Prague and thence to Poland. After 1934 he lived in Copenhagen.

SCHELLING, ERNEST HENRY. American pianist, composer, and conductor, died in New York, Dec. 8, 1939. See N. I. ENCY., VOL. XX, P. 530 and N. I. SUPP., VOL. 2, P. 1422. During 1936-38 he was conductor of the Baltimore Symphony Orchestra.

SCHIPA, MICHELANGELO. Italian historian, professor of history at Naples University (1901-29) and author of *Sicilia e Italia sotto Federico II* (1928); died in Naples, Oct. 6, 1939; born there in 1854.

SCHMIDT, NATHANIEL. American Orientalist; died in Ithaca, N. Y., June 30, 1939. See N. I. ENCY., VOL. XX, P. 550. He was retired as professor emeritus by Cornell University in 1932, and during the summers of 1925-35 he lectured at Columbia University. President of the American Oriental Society (1931-32), he was the author of many works, the latest being *The Coming Religion* (1930).

SCHNEIDER, GEORGE J. American congressman, a member of the Progressive Party; born in Grand Chute, Wis., Oct. 30, 1877; died in Toledo, O., Mar. 12, 1939. Vice-president of the International Brotherhood of Paper Makers' Union, a member of the Wisconsin State Federation of Labor, during his congressional terms (1923-33

and 1935-39), he fought for the extension of labor's powers and the establishment of a third party.

SCHEIDER, HERMAN. American educator; died in Cincinnati, O., Mar. 28, 1939. See N. I. SUPP., Vol. 2, p. 1424. Retired as president emeritus of the University of Cincinnati in 1932, he retained the posts of dean of the College of Engineering and Commerce, director of the School of Applied Arts, and director of the Institute for Scientific Research. He was awarded the Lamme Medal in 1936.

SCHURFF, HANS. Austrian politician; born at Modling, May 12, 1875; died in Vienna, Germany, Mar. 28, 1939. He was a member of the Austrian National Assembly during 1919-33, minister of commerce and traffic (1923-29), minister of justice (1930-32), and mayor of Modling (1929-34). He was an advocate of Anschluss.

SCHWAB, CHARLES M. (MICHAEL), died Sept. 18, 1939. SCHWERTNER, AUGUST. American Roman Catholic Bishop of Wichita from June 8, 1921; died in Wichita, Kans., Oct. 2, 1939; born in Canton, O., Dec. 23, 1870; ordained in 1897.

SCOTT, SIR ERNEST. Australian historian; died in Melbourne, Dec. 6, 1939; born in Northampton, England, 1868. Associated with the University of Melbourne from 1914, he was professor of history there until 1936 when he was retired as emeritus. In 1939 he was elected president of the Australian and New Zealand Association for the Advancement of Science and was knighted. His latest work was *History of the University of Melbourne* (1936).

SENGEWICK, GEORGE HERBERT. Canadian lawyer; died in Ottawa, Mar. 14, 1939, born in Musquodoboit, N. S., Feb. 12, 1878. During 1930-33 he was a justice of the Supreme Court of Ontario, and thereafter, Chairman of the Tariff Board of Canada.

SELIGMAN, EDWIN ROBERT ANDERSON, died July 18, 1939.

SENARENS, LUIS P. American writer of "dime novel fiction," the creator of the fabulous Frank Reade; died in Brooklyn, N. Y., Dec. 26, 1939; born there in 1863.

SHAW, ARTHUR. British trades-unionist, born in Leeds in 1880; died in Bradford, England, Feb. 21, 1939. He was secretary of the National Union of Dyers, Bleachers, and Textile Workers, of the National Association of Unions in the Textile Trade, and of the National Wool Textile Industrial Council, and served on many government commissions and committees. In 1937 he was a delegate to the Technical Tripartite Conference on the Textile Industry held in Washington, D. C.

SHERMAN, LAWRENCE Y. American lawyer; died at Daytona Beach, Fla., Sept. 15, 1939. See N. I. ENCY., Vol. XX, p. 820. He served in the U.S. Senate until 1921 and was an opponent of the League of Nations. Thereafter he entered the banking business in Florida and retired in 1933.

SHIRLEY-FOX, JOHN. British painter and numismatist; died in Bath, June 3, 1939. He exhibited at the Royal Academy (1890-1915), was the recipient of the medal of the Royal Numismatic Society (1920) and the Triennial gold medal of the British Numismatic Society (1925), and was the author of *The Pleasures of English Coin Collecting* (1934).

SHREVE, MILTON. American lawyer, and Republican member of Congress from Pennsylvania (1913-15; 1919-23; 1923-33); died in Erie, Pa., Dec. 23, 1939; born in Venango Co., Pa. May 3, 1858.

SIEFENBERG, FREDERIC, S. J. American Roman Catholic sociologist; born in Cincinnati, O., Jan. 28, 1872; died in Detroit, Feb. 20, 1939. He entered the Society of Jesus in 1893 and was ordained in 1907. Associated with Loyola University, Chicago from 1911, he was dean of the School of Sociology there during 1914-32. Thereafter he was executive dean of the University of Detroit.

SIHVONEN, VAINO I. Finnish physiochemist, professor at the Helsinki Technical University, killed in the Russian bombardment of Helsinki, Finland, Nov. 30, 1939.

SILCOX, FERDINAND A. American forester, director of the U.S. Forest Service from Nov. 15, 1933; died in Alexandria, Va., Dec. 20, 1939; born in Columbus, Ga., Dec. 25, 1882. He served as arbitrator in the New York City elevator strike in 1936.

SILVA VILDÓSOLA, CARLOS. Chilean journalist, associated with *El Mercurio* from 1903 to 1931 and a delegate to the 6th Pan American Conference (1928); died in Santiago, Dec. 22, 1939; born in Chihuahuihue, Nov. 4, 1870.

SIMPSON, JAMES. American industrialist; died in Chicago, Nov. 25, 1939; born in Glasgow, Scotland, Jan. 26, 1874. Associated with Marshall Field & Co., from 1891, he was its president in 1923 and chairman of the board from 1930 to 1932, when he resigned. Thereafter he was chairman of the board and a director of the Commonwealth Edison Company.

SIROVICH, WILLIAM I. American physician and Democratic Congressman from New York City (1927-39); died in New York, Dec. 17, 1939; born in York, Pa., Mar. 18, 1882. He was a member of the patents (chairman), civil service, and merchant marine and fisheries committees of the House.

SKIRMUNT, CONSTANTINE. Polish diplomat, died in Oc-

tober, 1939; born Aug. 30, 1866. He served as Polish minister for foreign affairs (1921-22), as minister in London (1922-29) and as Ambassador to Great Britain (1929-34).

SLAWEK, WALERY. Polish soldier and politician; died, a suicide, in Warsaw, Apr. 3, 1939; born in 1879. A follower of Pilsudski, he served in the Sejd during 1928-30 and 1935-38 and was premier of Poland in 1930 and during March-October, 1935.

SLEDD, ANDREW. American educator; born in Lynchburg, Va., Nov. 7, 1870; died in Decatur, Ga., Mar. 16, 1939. He taught Greek and Latin until he became president of the University of Florida (1904-09) and of Southern University, Greensboro, Ala., (1910-14). Thereafter he was professor of New Testament Greek and librarian of the theology department at Emory University.

SMITH, ARTHUR DONALDSON. American physician and explorer; born in Andalusia, Pa. Apr. 27, 1864; died in Philadelphia, Feb. 19, 1939. For his explorations under the auspices of the British Museum during 1890-1900 he received the Callum gold medal of the American Geographical Society, and the patron's medal of the Royal Geographical Society. He wrote *Through Unknown African Countries* (1901).

SMITH, ROBERT SENECA. American Congregational clergyman; born in Clarendon, Vt., Nov. 18, 1880; died in Spring Glen, Conn., Jan. 15, 1939. Ordained in 1906 he held various pastorates until he became professor of Biblical literature at Smith College (1917-25) and thereafter Horace Bushnell professor of Christian Nurture at Yale University Divinity School. A member of many important church committees, he also edited and wrote many religious works, his latest being *The Art of Group Worship* (1938).

SMITH, S(AMUEL) CALVIN. American heart specialist, consulting cardiologist from 1925, and author of *Heart Affections—Their Recognition and Treatment* (1920), *Heart Records—Their Interpretation and Preparation* (1923), *How Is Your Heart?* (1924), *That Heart of Yours* (1934); born in Hollidaysburg, Pa., Feb. 28, 1881; died in East Stroudsburg, Pa., July 31, 1939.

SMITHELLS, ARTHUR. British educator; born in Bury, Lanc., May 24, 1860; died in London, Feb. 8, 1939. He was professor of chemistry at Yorkshire College and the University of Leeds (1885-1923) and director of Salters' Institute of Chemistry (1927-30). He served as president of the Institute of Chemistry (1927-30) and in 1935 was Harrison Lecturer. He wrote principally on flame and spectrum analysis.

SNELLING, CHARLES MERCER. American educator; died in Athens, Ga., Sept. 19, 1939; born in Richmond, Va., Nov. 3, 1862. Associated with the University of Georgia from 1888, he was dean of Franklin College (administrative dean of the University) (1906-25), Acting Chancellor (President) of the University (1925-26), Chancellor (1926-32), Chancellor of the University System of Georgia (1932), and Chancellor Emeritus (1933).

SOERENSEN, SOPHREN PETER LAURITZ. Danish chemist; born in 1868; died in Copenhagen, Feb. 12, 1939. He was director of the Chemical Department of Carlsberg Laboratory during 1901-38 and published *Studies on Proteins* (1915-32).

SOMMERFFELD, MARTIN. German educator; born in Augsburg, Germany, May 2, 1894; died in Bristol, Vt., July 26, 1939. Dismissed from the University of Frankfurt by the Nazi Government in 1933, he came to the United States where he taught German at various educational institutions, organizing the German department at Queens College, New York in 1939.

SOUVAY, CHARLES LEON, C. M. American Roman Catholic clergyman; died in Paris, Dec. 19, 1939; born in Saulxures-sur-Moscelotte, Dec. 15, 1870. He entered the Congregation of Missions (Vincentians) in 1893, was ordained in 1896, and became professor at Kenrick Seminary, St. Louis, Mo., (1903-32) and rector (1926-32). He became assistant superior of his Congregation in 1932 and Superior in 1933.

SPARO, MEHMET. Yugoslav politician; a former leader of the Bosnian Moslem Party, he was minister of communications during 1935-37 and again in 1939, and after 1935 was a leader of the Yugoslav Radical Union (Government Party); died in Belgrade, June 28, 1939.

SPENCER, LORILLARD. American aeronautical manufacturer; died in Newport, R. I., June 9, 1939; born in New York City, July 4, 1883. Interested in aviation from 1921, he served as president of the Wittermann Aircraft Corporation (1923-28), of the Fokker Aircraft Corporation of America (1927-28), of Aviation Consolidated, Inc., and of similar organizations. He was decorated for bravery during the World War.

SPICER, CLARENCE W. American mechanical engineer; died in Miami, Fla., Nov. 21, 1939; born in West Hallock, Ill., Nov. 30, 1875. The inventor of the Spicer universal joint in 1902 he organized a company for its manufacture and was associated with it until his death. In 1938 he was president of the Society of Automobile Engineers.

SPINGARN, JOEL E. (LIAS), died July 26, 1939.

STEARN, FRANK W. American merchant; born in Bos-

ton, Nov. 8, 1856; died there Mar. 6, 1939. He was chairman of the board of directors of R. H. Stearns Co., Boston, but it was his friendship with Calvin Coolidge, to whom he was an unofficial adviser, that made him well known.

STEINER, FREDERICK. American ex-Senator; born in Jefferson, Ore., Oct. 13, 1883; died in Washington, Feb. 3, 1939. He served in the Senate as a Republican member from Oregon from 1927 until Jan. 31, 1938, when he resigned because of ill health, and was a member of the appropriations, banking and currency, and rules committees. In 1936 he delivered the "keynote" address at the Republican National Convention.

STENGEL, ALFRED. American physician; died in Philadelphia, Apr. 10, 1939; born in Pittsburgh, Nov. 3, 1868. Associated with the University of Pennsylvania (M.D., 1889) from 1893, he was retired as professor emeritus in 1937 and then appointed vice-president in charge of medical affairs of the University. A specialist in internal medicine, he wrote *A Text-Book of Pathology* (1898; 8th ed., 1924).

STEFANI, FRANZ VON. German Nazi leader; born in Bielefeld, June 12, 1876; died in Berlin, Apr. 26, 1939. After service in the World War he aided in the suppression of the Spartacists and led in the storming of the Social Democrat newspaper *Vorwarts* (Jan. 11, 1919) and as a result was tried for murder but the case was dropped. He took part in the Kapp putsch (1920) and in 1922 joined the Voelkische Wehrverband as managing director. He was district leader of the Stahlhelm (1924-33), founded its woman's organization, and after the merger of the Stahlhelm and the Steel Helmet organization he was appointed supreme commander of the storm troop reserves. He was elected to the Reichstag in 1930.

STERLING, FORD. American motion picture comedian, one of the original Keystone Cops (1912-15); died in Hollywood, Calif., Oct. 13, 1939; born in La Crosse, Wis., in 1884.

STEVENSON, (JOSEPH) ROSS, died Aug. 13, 1939.

STEWART, ALEXANDER M. American contractor, chairman of the board of James Stewart & Co., builders of numerous important buildings in the United States and abroad including Madison Square Garden, New York and the Department of Labor Building in Washington; died in New York, Dec. 22, 1939; born in Kingston, Ont., Canada, Oct. 2, 1857. His firm also rebuilt the Galveston waterfront after the storm of 1889 and constructed one of the first modern earthquake proof buildings in Japan, the bank for the Mitsui Gomei Kaisha.

STEWART, DOUGLAS ROY. British colonial administrator; born in 1886; died at Basseterre, St. Kitts, Feb. 1, 1939. From 1905 to 1926 he held various positions in the Fiji Civil Service, and thereafter he was colonial secretary at Barbados (1926-31) and administrator of St. Christopher-Nevis. Also, he served as administrator for Barbados (1927, 1929-30), and Leeward Islands Colony (1935-37).

STEWART, SAMUEL V. American lawyer and public official; died in Helena, Mont., Sept. 15, 1939; born in Monroe Co., Ohio, Aug. 2, 1872. He was governor of Montana during 1913-21 and associate justice of the Supreme Court of Montana from 1933 to 1939.

STOCKARD, CHARLES RUPPERT, died Apr. 7, 1939.

STOCKTON, SIR EDWIN. British cotton manufacturer; died at Chelford, Cheshire, Dec. 4, 1939; born in Manchester, Mar. 18, 1873. He served on the Cotton Control Board (1916-19), was a member of Parliament (1922-23), and was a director of many business organizations.

STODDART, ARCHIBALD PELLE. British naval officer; died in Broome, Cornwall, Dec. 19, 1939; born Sept. 5, 1860. He was second in command of the victorious British naval squadron at the battle of the Falkland Islands, Dec. 8, 1914. He retired in 1918 and was promoted to admiral in 1920.

STOKES, FREDERICK A. American publisher; died in New York, Nov. 15, 1939. See N. I. ENCY., VOL. XXI, P. 548.

STONE, WITMER. American naturalist; born in Philadelphia, Sept. 22, 1866; died there, May 23, 1939. He became associated with the Academy of Natural Sciences in Philadelphia in 1891 and during 1925-28 was director of the Museum, retiring as emeritus in 1929. One of the country's foremost ornithologists, he edited *The Auk* (1912-36) and wrote extensively on birds. In 1931 he received the Otto Hermann Medal of the Hungarian Ornithological Society.

STUART-JONES, SIR HENRY. British educator; died at Tenby, Wales, June 29, 1939. See N. I. ENCY., VOL. XXI, P. 608 and N. I. SUPP., VOL. 2, P. 1513. He retired as vice-chancellor of the University of Wales in 1931. In 1936 he completed his revision of Liddell and Scott's *Greek Lexicon* parts i-ix, begun in 1925.

STURKHAHN, CARL F. American insurance executive, chairman of the board of the Northeastern Insurance Co.; died in Beverly Hills, Calif., Dec. 12, 1939; born in Hanover, Germany, Jan. 25, 1871.

SUGIMURA, YOTARO. Japanese diplomat; born in 1884;

died in Tokyo, Mar. 24, 1939. He served in the Japanese office of the League of Nations from 1923, and in 1934 was appointed ambassador to Italy, and served as ambassador to France during 1937-38. He was an expert in the national Japanese sport of judo.

SULLIVAN, MARY (MRS. CORNELIUS J.). American art patron and a founder (1929) of the Museum of Modern Art, New York City; died in Astoria, L. I., N. Y., Dec. 5, 1939; born in Indianapolis in 1879.

SUMMERBELL, MARTYN. American clergyman; died at Lakemont, N. Y., Sept. 12, 1939; born in Naples, N. Y., Dec. 20, 1847. Ordained a minister of the Christian Church in 1867, he held various pastorates and from 1898 to 1935 was president of Palmer Institute (Starkey Seminary) at Lakemont.

SUPER, CHARLES WILLIAM. American educator, died at Athens, O., Oct. 9, 1939; born in Pottsville, Pa., Sept. 12, 1842. Professor of Greek at Ohio University (1879-1907), he was president of the University during 1883-96 and 1899-1901.

SWANSON, CLAUDE A., died July 7, 1939.

TAFT, GEORGE W. American Baptist theologian; born in Salem, Mich., July 17, 1865; died in Deland, Fla., Jan. 21, 1939. Ordained in 1889, he did missionary work in Japan during 1889-97, and in 1916 was appointed dean and professor of church history and homiletics at Northern Baptist Theological Seminary, Chicago. Elected president in 1918, he was retired as emeritus in 1936. He served on many church committees and was the editor of the Japanese edition of Uhlhorn's *Conflicts of Heathenism with Christianity*.

TAYLOR, J. WILL. American Congressman, Republican member of the House of Representatives from Tennessee from 1919 to 1939; died in La Follette, Tenn., Nov. 14, 1939; born in Union Co., Tenn., Aug. 28, 1880. An advocate of the payment of the soldiers' bonus and usually an opponent of New Deal legislation, he supported the TVA power program and voted for the repeal of the arms embargo. He was ranking member of the House immigration committee.

TAYLOR, RICHARD V. American politician; died in Mobile, Ala., Dec. 22, 1939; born in New Bern, N. C., Aug. 11, 1859. He was a member of the city administration, commission form of government of Mobile (1921-26; 1931-37; 1937-43) and served as the city's mayor during 1921-26 and 1933-37. By appointment of President Coolidge he was a member of the Interstate Commerce Commission (1926-30).

TCHENG LOH. See CHEN LU.

TELESZKY, JOHN. Hungarian financier; born in Nady Varad, Transylvania in 1868; died in Budapest, June 13, 1939. During the World War he was minister of finance (1912-17) and thereafter a member of the Upper House. In recent years he was president of the First Hungarian Insurance Co. and similar organizations. He was the author of a Pension Law and wrote on economic subjects.

TEMPERLEY, HAROLD WILLIAM VAZEILLE. British historian; died in Cambridge, July 11, 1939; born Apr. 20, 1879. He saw service in the Near East during the World War and after, and edited *The History of the Peace Conference* (6 vol., 1920-24) and with G. P. Gooch, *British Documents on the Origin of the War* vol. i-ix, 1925-38). After 1931 he was professor of modern history at Cambridge, and in 1938 he became master of Peterhouse at that University. From 1933 he was president of the International Historical Congress, and after 1935 he became president of the New Commonwealth Institute for Research and editor of the *New Commonwealth Quarterly*. He wrote *The Foreign Policy of Canning* (1925) and with L. M. Penson, *Foundations of British Foreign Policy* (1938) and *A Century of Diplomatic Blue Books* (1938).

TEMPLETON, FAY, died Oct. 3, 1939.

TERÁN, JUAN BAUTISTA. See SPANISH-AMERICAN LITERATURES, Argentina, Necrology.

THOMSON, SIR BASIL. British detective; formerly in the colonial service and governor of Dartmoor prison and Wormwood Scrubs, in 1913 he became assistant commissioner of the London Metropolitan Police (Scotland Yard), serving until 1919 when he was appointed Director of Intelligence. He retired in 1921 and devoted himself to writing, his latest work being *The Story of Scotland Yard* (1935); born Apr. 21, 1861; died in London, Mar. 26, 1939.

THORPE, ROSE HARTWICK (MRS. E. CARSON). American poet, died in San Diego, Calif., July 19, 1939. See N. I. ENCY., VOL. 22, P. 237.

TODD, DAVID. American astronomer, died in Madison Heights, Va., June 1, 1939. See N. I. ENCY., VOL. XXII, P. 320. In 1920 he was retired as professor emeritus under a grant from the Carnegie Foundation. His *Astronomy To-day* was published in 1924, and in the following year, with the co-operation of the U.S. Army Air Service, he obtained the first photograph of the solar corona made from an airplane.

TOLLER, ERNST, died May 22, 1939.

TORRE, LISANDRO DE LA. Argentine politician, committed suicide in Buenos Aires, Jan. 4, 1939. Born in

1869, he founded the Progressive Democratic Party and served in the Senate until 1935. In 1916, and again in 1931, he was an unsuccessful candidate for the Presidency.

TOWER, SIR REGINALD. British diplomatist; born Sept. 1, 1860; died near Canterbury, Eng., Jan. 21, 1939. In the diplomatic service from 1885 he served in various embassies throughout the world until 1906 when he was named envoy extraordinary and minister plenipotentiary in Mexico. Thereafter he held the same position in the Argentine Republic (1910-19), was minister plenipotentiary to Paraguay (1911-19), and was temporary administrator of the Free City of Danzig and High Commissioner of the League of Nations at Danzig (1919-20).

TOWNSEND, JULIUS C. American naval officer; died in Brooklyn, N. Y., Dec. 28, 1939; born in Athens, Mo., Feb. 22, 1881. Entering the navy in 1904 he was advanced through the grades to rear admiral in 1936, and at his death was commandant of the Fourth Naval District, Philadelphia.

TRENT, WILLIAM PETERFIELD. American literary critic, died in Hopewell Junction, N. Y., Dec. 7, 1939. See N. I. ENCY., VOL. XXII, p. 455. After 1900 he was professor of English literature at Columbia University, and in 1929 he was retired as emeritus. In 1931 he was co-editor of the Columbia University edition of *Complete Writings of John Milton*.

TRINKLE, (ELBERT) LEE. American lawyer, governor of Virginia from 1922 to 1926; died in Richmond, Va., Nov. 25, 1939; born in Wytheville, Va., Mar. 12, 1876.

TROTTER, WILFRED. British surgeon, professor of surgery at the University College Hospital Medical School after 1935 and honorary surgeon to the King (1928-32); died in Blackmoor, Hamp., Nov. 25, 1939; born in 1872.

TUBELIS, JUOZAS. Lithuanian politician; died at Kaunas, Lithuania, Sept. 30, 1939; born in 1882. After service in the Lithuanian war of independence, he served in various cabinets and in 1930 was named prime minister. Forced out of office in 1938 he continued as minister of agriculture, and at his death was governor of the Bank of Lithuania. Through his efforts were established Lietūkis, the Union of Lithuanian Agricultural Co-operative Societies; Pienocentras, the Central Union of Dairy-farming Co-operative Societies; and the Maistas Joint-stock Company, through all of which passes the bulk of Lithuania's exports of foodstuffs and dairy products. Tubelis headed the National Party and was a contributor to *Lietuvos Aidai*.

TUCKER, BENJAMIN R. American philosophical anarchist, died at Pont Ste. Devote, Monaco, June 22, 1939. See N. I. ENCY., VOL. XXII, p. 533. He gave up the editorship of *Liberty* in 1908 when he left the United States to live abroad.

TURNER, ARTHUR LOGAN. Scottish surgeon, consulting surgeon in the ear and throat departments of the Royal Infirmary of Edinburgh and of the Deaconess Hospital, Edinburgh; died in Edinburgh, June 6, 1939; born there, May 6, 1865. Active in medical societies in Great Britain he was joint editor of the *Journal of Laryngology and Otolaryngology* (1921-29), and edited *Diseases of the Nose, Throat, and Ear* (1924, 1928, 1932), University of Edinburgh *Journal* (1928-37), *Joseph, Baron Lister, A Centenary Volume, 1827-1927*, and *A History of the University of Edinburgh* (1933).

TURNER, CLARENCE W. American congressman (Dem.); born near Clydeton, Tenn., in 1867; died in Washington, Mar. 24, 1939. He filled an unexpired term in Congress in 1922 and then was elected county judge, in which post he remained until he was elected to the 73d Congress in 1933. He was a member of the military affairs committee.

VAILLANT, CHARLES. French radiologist; died in Paris, Dec. 4, 1939; born in 1872. Attached to the X-ray department of the Lariboisiere Laboratory in Paris from 1895, he worked constantly until a victim of his own X-ray research. In 1923 he received the Legion of Honor, the Carnegie Hero Medal, and the Gold Medal of the City of Paris.

VALDEMAR. Danish prince, son of Christian IX; born at Bernstorff, Oct. 27, 1858; died in Copenhagen, Jan. 14, 1939. After his retirement from the Royal Danish Navy as admiral, he took over the management of the East Asia Ocean Steamship Line. Before the World War he was known as "uncle of Kings."

VANCE, JAMES I. American Presbyterian clergyman; died in Blowing Rock, N. C., Nov. 24, 1939; born in Arcadia, Tenn., Sept. 25, 1862. Ordained in 1886, he became pastor of the First Church of Nashville, Tenn., in 1910, serving until 1936, when he was retired as pastor emeritus. During 1918-19 he was moderator of the General Assembly of the Presbyterian Church in the United States, Southern. A prolific writer, his latest work was *Thus Pray Ye* (1935).

VAN DINE, S. S. See WRIGHT, WILLARD HUNTINGTON. **VAN DYKE, JOHN W.** American industrialist; a pioneer in the oil industry, president of the Atlantic Refining Co., from 1911 to 1927, and thereafter chairman of the board of directors; died in Philadelphia, Sept. 13, 1939; born in Mercersburg, Pa., in 1850.

VILLAZON, ELIODORO. Bolivian politician; president of Bolivia during 1909-13; born in Cochabamba, Jan. 22, 1848; died there, Sept. 12, 1939.

VILLIERS, EDWARD CECIL. British rear admiral, commander of the forces guarding the Thames estuary during the World War, retired in 1917; born in 1866; died at Bishops Stortford, Apr. 16, 1939.

VINCENT, JOHN MARTIN. American historian; died in La Jolla, Calif., Sept. 22, 1939. See N. I. ENCY., VOL. XXIII, p. 161. He was retired as professor emeritus at Johns Hopkins University in 1925, to which he bequeathed about \$1,000,000.

VOLLARD, AMBROISE. French art dealer who early recognized the worth of such modern painters as Cezanne, Degas, Renoir, etc., and who introduced their works to the public; born on Reunion Island in 1867; died in Versailles, July 21, 1939.

WAGNER, GERHARD. German eugenicist; born in Neu-Heiduk, Aug. 18, 1888; died in Berlin, Mar. 25, 1939. Chief medical officer of the Reich he was leader of the Department for Public Hygiene and was believed to be one of the innovators of the Nuremberg racial laws of 1935.

WAID, D(AN) EVERETT. American architect; died in Old Greenwich, Conn., Oct. 31, 1939; born in Gouverneur, N. Y., Mar. 31, 1864. President of the American Institute of Architects (1924), he practiced in New York after 1898 and was co-architect for the new Metropolitan Life Insurance Building, New York.

WALDO, DWIGHT B. American educator, president of Western State Teachers College, Kalamazoo, Mich., from 1904 to 1936 and president emeritus thereafter; died in Kalamazoo, Oct. 29, 1939; born in Arcade, N. Y., June 13, 1864.

WALGREEN, CHARLES R. American merchant, founder (1907) and president (1907-1939) of the Walgreen Co., retail drugs; died in Chicago, Dec. 11, 1939; born in Knox Co., Ill., Oct. 9, 1873. In 1937 Mr. Walgreen founded the Walgreen Foundation for the study of American Institutions at the University of Chicago.

WALKER, ARTHUR GEORGE. British sculptor; died at Lower Parkstone, Dorset, Sept. 13, 1939; born Oct. 20, 1861. His works include the War Memorial at Bury St. Edmunds; a statue of Florence Nightingale, Waterloo Place, London; St. Francis for St. Francis's Church at Charnminster; a life-size group, "Adam and Eve" (They were afraid) purchased for the Walker Art Gallery, Liverpool.

WALKER, HUGH. British educator; born Jan. 7, 1855; died in London, June 28, 1939. Mayor of Lampeter in South Wales during 1900-02, he became professor of English literature at St. David's College there. He contributed to the *Cambridge Modern History* and the *Cambridge History of English Literature* and wrote several books, the latest being *English Satire and Satirists* (1925).

WALKER, LAPSLEY GREENE. American editor, associated with the *Chattanooga Times* from 1883, and its editor from 1903 to 1932, when he was retired as emeritus; died in Chattanooga, Tenn., July 12, 1939; born in Rogersville, Tenn., July 20, 1854.

WALLACE, JAMES. American educator; died in St. Paul, Minn., Aug. 23, 1939; born near Wooster, O., Mar. 12, 1849. Associated with Macalester College, St. Paul, from 1887, he was its president during 1896-1906 and thereafter head of the Biblical department until 1932. In 1923 he was made president emeritus.

WALLACE, ROBERT. Scottish agriculturist; died in Kincardine-on-Forth, Jan. 17, 1939. See N. I. ENCY., VOL. XXIII, p. 289. He retired in 1922 as professor of agriculture and rural economy and as Garton lecturer at the University of Edinburgh. He wrote *Farm Live Stock of Great Britain* (5th ed., 1923).

WALSH, FRANK (FRANCIS) P(ATRICK), died May 2, 1939.

WARFIELD, RALPH M. American rear admiral; born in No. Oxford, Mass., in 1881; died in New York, Mar. 21, 1939. After serving in Santo Domingo from 1919 to 1922, he saw service at various naval posts, and in January, 1939 was promoted to rear admiral and appointed public works officer of the 3d Naval District, U.S.N.

WARRINGTON, ALBERT P. American theosophist, at one time president of the international and American Theosophical Societies, and the author of *Theosophy and Occultism*; born in Berlin, Md., Aug. 27, 1866; died in Ojai, Calif., June 16, 1939.

WASHBURN, MARGARET FLOY. American psychologist, died in Foughkeepsie, N. Y., Oct. 29, 1939. See N. I. ENCY., VOL. XXIII, p. 341. Elected to the National Academy of Sciences in 1931, she was retired as emeritus professor of psychology at Vassar College in 1937.

WATSON, JOHN. Canadian educator; died in Kingston, Ont., Jan. 27, 1939. See N. I. ENCY., VOL. XXIII, p. 402 and N. I. SUPP., Vol. 2, p. 1687. He was retired in 1924 as professor emeritus of philosophy at Queen's University in Kingston.

WATSON, JOHN JAY. American manufacturer; born in Jamestown, R. I., Nov. 12, 1874; died in Albany, Ga.,

Mar. 30, 1939. He entered the rubber business in 1899, and in 1901 became treasurer of the U.S. Rubber Co. and was president of the General Rubber Co., during 1908-10. In 1913 he became treasurer of the International Agricultural Corporation, manufacturers of fertilizers, and in 1927 was elected president.

WEBER, HERMAN CARL, American Presbyterian clergyman; born in Mina, N. Y., Feb. 9, 1873; died in East Orange, N. J., July 25, 1939. After doing parish work from his ordination in 1896, he became associated with the General Council of the Presbyterian Church in 1925, and in 1932 became editor of *The Yearbook of American Churches*.

WESTERMARK, EDWARD ALEXANDER, Finnish sociologist; died at Lapinlahti, Finland, Sept. 3, 1939. See N. I. ENCY., Vol. XXIII, p. 477 and N. I. SUPP., Vol. 2, p. 1690. He was emeritus professor of philosophy at the Academy of Abo in Finland, and until 1930, professor of sociology at the University of London. Among his later works were *Early Beliefs and their Social Influence* (1932); *Three Essays on Sex and Marriage* (1934); *The Future of Marriage in Western Civilization* (1936), and *Christianity and Morals* (1939).

WHITNEY, JAMES P., British historian; born Nov. 30, 1857; died at Cambridge, June 17, 1939. Ordained in 1885 he held various posts in England and in Canada, and from 1908 to 1918 was professor of ecclesiastical history at King's College, London, and thereafter Dixie professor at Cambridge University. He wrote on medieval and modern English history and was joint editor of the *Cambridge Medieval History* (vol. i-iii).

WICKENS, CHARLES HENRY, Australian statistician; died in Victoria, Australia, July 30, 1939; born in Lockwood, Australia, Oct. 16, 1872. A member of the Commonwealth Bureau of Census and Statistics from 1906, he became Commonwealth statistician in 1922 and actuary as well in 1924. He retired in 1932. He had charge of the Australian Population Censuses of 1911 and 1921 and of the War Census of 1915.

WICKERSHAM, JAMES, American lawyer; died in Juneau, Alaska, Oct. 24, 1939; born in Patoka, Ill., Aug. 24, 1857. He began his Alaskan career in 1900 as U.S. district judge for the 3d district of Alaska, which he served until 1907. He was Alaskan delegate to Congress during 1909-21 and again during 1931-33. He edited *Alaskan Territorial Law Reports*, 1867 to 1935 and a *Bibliography of Alaskan Literature*, 1724-1924, and wrote *Old Yukon: Tales, Trails and Trials* (1938).

WIENER, LEO, American philologist, died in Belmont, Mass., Dec. 12, 1939. See N. I. ENCY., Vol. XXIII, p. 550. In 1930 he was retired as professor emeritus at Harvard. His latest work was *Mayan and Mexican Origins* (1926).

WILD, FRANK, British Antarctic explorer with Captain Scott (1901-04), Shackleton (1907-09), Dr. Mawson (1911-13), the Imperial Trans-Antarctic Expedition (1914), and Shackleton (1921), being second in command on the *Quest*. He received the David Livingstone Centenary Medal of the American Geographical Society and the Patron's Medal of the Royal Geographical Society in 1924 and was the author of *Shackleton's Last Voyage* (1923). Born in Skelton, Yorks., 1874; died at Klerksdorp, Transvaal, Aug. 20, 1939.

WILFORD, SIR THOMAS MASON, New Zealand politician, High Commissioner for New Zealand (1930-34) and director of the National Bank of New Zealand, London (1934-37); died in Wellington, N. Z., June 22, 1939; born in 1870.

WILLIAMS, SOPHIA (MRS. GEORGE A. R.) formerly Lady Heath, British aviatrix; died in London, May 9, 1939; born in 1896. In May, 1928 she made the first solo flight from an overseas Dominion to England, flying from South Africa.

WILLIAMSON, SIR FREDERICK HERBERT, British civil servant, director of Postal Services from 1922 to 1937 and leader of British delegation to International Postal Congresses at Madrid (1920), Stockholm (1924), and Cairo (1934); died in Purley, Surrey, Feb. 25, 1939; born in Lymm, Cheshire, 1876.

WILLIAMSON, SYDNEY B. (ACON), American engineer; born in Lexington, Va., Apr. 15, 1865; died there, Jan. 13, 1939. During 1907-12, he was associated with Goethals in the building of the Panama Canal, and in 1915 was chief of construction for the U.S. Bureau of Reclamation. Thereafter he was associated with Guggenheim Brothers and other companies. He was senior civilian member of the Inter-oceanic Canal Board from 1931 until his retirement May 1, 1935.

WILLIS, W. SPADER, American educator, formerly principal and organizer of the Newark Normal School (Newark State Teachers College) and vice-president of the Institute of Arts and Sciences (Newark University), retired in 1927; born near Freehold, N. J., 1864; died in Sussex, N. J., July 5, 1939.

WILSON, FREDERICK NEWTON, American educator; died in Princeton, N. J., Nov. 15, 1939; born in Brooklyn, N. Y., Dec. 23, 1855. Associated with Princeton University from 1880 when he started the department of

graphics in the John C. Green School of Science, he was appointed professor of descriptive geometry, stereotomy, and technical drawing in 1883 and was retired as emeritus in June, 1923. He wrote *Graphics and Faith* (1936).

WILSON, CLARENCE TRUK, died Feb. 16, 1939.

WILSON, EDMUND BECHER, died Mar. 3, 1939.

WILSON, HARRY LEON, American author, died in Carmel, Calif., June 28, 1939. See N. I. ENCY., Vol. XXIII, p. 599. His later works were *Merton of the Movies* (1922), which was dramatized and also made into a motion picture, *Lone Tree* (1929), and *Two Black Sheep* (1931).

WILSON, S. (AMUEL) DAVIS, American Republican politician; died in Philadelphia, Aug. 19, 1939; born in Cambridge, Mass., Aug. 31, 1881. Elected Mayor of Philadelphia in 1935, his tenure was a stormy one and he was indicted on Sept. 9, 1938 on the charge of "misbehavior in office." The indictment was quashed in November, but on Feb. 28, 1939 he was reindicted. Mayor Wilson resigned on Aug. 11, 1939 because of ill health.

WIMBORNE, VISCOUNT, IVOR CHURCHILL GULST, British politician; died in London, June 14, 1939. See N. I. ENCY., Vol. XXIII, p. 606. He was exonerated by a Royal Commission of any responsibility for the Easter uprising in Ireland in 1916 and was reappointed Lord Lieutenant until 1918. He became a viscount in 1918 and subsequently was chairman of the Royal Commission on Coast Erosion and Afforestation.

WINSOR, FRANK E., American engineer; born in Providence, R. I., Nov. 16, 1870; died in Boston, Jan. 30, 1939. A leader in his profession, from 1891 he was associated with the waterworks departments of Boston, New York, and Providence, his last post being that of chief engineer of the Metropolitan District Water Supply, Boston in charge of the Quabbin Reservoir Project.

WOLF, LUTHER B., American Lutheran missionary; died in Baltimore, Md., Nov. 25, 1939; born in Abbotstown, Pa., Nov. 29, 1857. Ordained in 1883, he was president of the American Evangelical Lutheran Mission College at Guntur, India during 1883-1907. Thereafter he was secretary-treasurer of the Board of Foreign Missions (1908-18) and secretary of the United Lutheran Church from 1918 to 1933 when he retired.

WONG, HIN (HUANG HSIEN-CHAO), Chinese journalist; born in Honolulu in 1889; died in Hongkong, Feb. 15, 1939. In 1912 he assisted Dr. Sun Yat-sen in the industrial development of China; subsequently was a correspondent of many newspaper bureaus; and prior to 1923 was editor of the Canton *Times* and editor-founder of the Canton *Daily News*. He taught journalism in several Chinese colleges and was active in civic affairs.

WOOD, HENRY A. (LEXANDER) WISE, American inventor, died in New York, Apr. 9, 1939. See N. I. ENCY., Vol. XXIII, p. 701. He retired as president of the Wood Newspaper Machinery Corporation in 1935. Besides the Autoplate, he invented the Autoreel (1916) and the Autopaster (1932).

WOODMAN, JOSEPH EDMUND, American geologist; born in Newbury, Mass., July 4, 1873; died in New York, May 19, 1939. He became geologist and director of the geological museum at New York University in 1909 and in 1935 he established the New York University Meteorological Observatory. He was retired as emeritus in 1938.

WOODS, FREDERICK ADAMS, American biologist, died in Rome, Italy, Nov. 5, 1939. See N. I. ENCY., Vol. XXIII, p. 713. He lectured at the Massachusetts Institute of Technology until 1923, and in 1931 was vice-president of the International Congress for Studies Regarding Population Problems which met at Rome.

WOODSON, UREY, American public official; Federal Alien Property Custodian (1933-July 24, 1939); publisher of Kentucky newspapers (1881-1929); died in Owensboro, Ky., Aug. 7, 1939; born in Madisonville, Ky., Aug. 16, 1859.

WOODWARD, WILLIAM, American artist, professor of drawing and painting at Tulane University from 1884 to 1921 when he was retired as emeritus, and founder of the School of Architecture there; died in New Orleans, La., Nov. 17, 1939; born in Seekonk, Mass., May 1, 1859.

WOOLLARD, HERBERT HENRY, Australian anatomist; born in Warracknabeal, Victoria, Aug. 4, 1889; died in London, Jan. 18, 1939. At his death he was professor of anatomy at the University of London (at St. Bartholomew's Hospital Medical School 1929-36, and at University College after 1936). He received the Symington Prize for Anatomical Research in 1926, was acting editor of the *Journal of Anatomy*, and had written extensively in this field of medical science.

WORTHINGTON, SIR PERCY S., British architect, senior member of the firm of Thomas Worthington & Sons, Manchester, where he was architect for many of the University's buildings; in 1930 he received the Royal gold medal of the Royal Institute of British Architects; died at Moberley, Cheshire, July 15, 1939; born Jan. 31, 1864.

WRIGHT, J. (OSHUA) BUTLER, American diplomat, died in Havana, Cuba, Dec. 4, 1939. See N. I. SUPP., Vol. 2, p. 1796. He was transferred from Hungary to Uruguay

in 1930, to Czechoslovakia in 1934, and to Cuba in July, 1937.

WRIGHT, WILLARD HUNTINGTON, died Apr. 11, 1939. WU PEI-FU, Chinese soldier; died in Peiping, Dec. 4, 1939; born in Peng-lai, Shantung, 1878. Regarded as the hope of China's idealists and the savior of the peace-loving middle class in 1922, in 1926 he was in control of five provinces with 60,000,000 inhabitants. In the following year he was defeated by Chiang Kai-shek and he retired to a monastery. Recently he had been entreated by the Japanese to join them in their war against China, but refused.

WYNNE, CYRIL, American diplomatist; died, a suicide, in Washington, Sept. 26, 1939; born in Oakland, Calif., Mar. 29, 1890. Associated with the U.S. Department of State for many years, in 1933 he was appointed chief of the division of research and publication. He taught constitutional law (1929-36) and legal history (1936-39) at Columbus University Law School in Washington. He saw service during the World War and attended the Peace Conference in Paris (1919).

YANGCO, THEODORO, Filipino politician; born in San Antonio, P. I., Nov. 9, 1861; died in Manila, Apr. 20, 1939. The owner and president of Theodoro R. Yangco shipping firm, he was resident commissioner to the United States from the Philippines from 1917 to Mar. 3, 1920.

YEATS, WILLIAM BUTLER, died Jan. 28, 1939.

YEOMANS, GEORGE DALLAS, American lawyer; born in Little Valley, N. Y., May 9, 1867; died in New York, Mar. 28, 1939. Associated with the legal department of the Brooklyn Rapid Transit Co., from 1901, he became its general counsel in 1918, and on June 14, 1923 he was elected vice-president and general counsel for the company's successor, the Brooklyn-Manhattan Transit Corporation and its affiliations.

YOUNG, ARCHIBALD, British surgeon, Regius professor of surgery at Glasgow University from 1924, and expert on skin grafting; born Nov. 10, 1873; died in Glasgow, July 23, 1939.

YOUNG, C. WALTER, American economist; born in 1903; died in Silver Springs, Md., Feb. 6, 1939. During 1926-36 he was associated with the Institute of Current World Affairs in Manchuria and in 1932 acted as legal counsel to the Lytton Commission of the League of Nations to investigate the Manchurian situation. At his death he was associated with the Federal Tariff Commission.

ZELNY, CHARLES, American zoologist, professor of zoology at the University of Illinois after 1909 and head of the department during 1933-38; died in Urbana, Ill., Dec. 21, 1939; born in Hutchinson, Minn., Sept. 17, 1878. He was president of the American Society of Zoologists in 1933.

ZEMGALS, GUSTAV, President of Latvia, 1927-30; died in Riga, Jan. 7, 1939. See N. I. SUPP., Vol. 2, p. 1808.

ZIMMERMAN, ALFRED R., Dutch lawyer; born in Amsterdam in 1869; died in Velp, The Netherlands, July 2, 1939. He served as High Commissioner of the League of Nations for the Financial Reconstruction of Austria (1922-26) and as chairman of the Anglo-Mexican Special Claims Commission (1927-32).

ZIMMERMAN, ALICE, British educator; born in Nottingham, Sept. 22, 1855; died in London, Mar. 22, 1939. She taught in English high schools during 1886-94, and wrote *Methods of Education in the United States*, a report on the schools and colleges of the United States which she visited in 1893; *Woman's Suffrage in Many Lands*, and translated *Meditations of Marcus Aurelius*.

NEGRI SEMBILAN. See **FEDERATED MALAY STATES.**

NEGROES. The curve of Negro achievement and difficulties during 1939 closely paralleled that of other Americans. In the matter of jobs and economic opportunity generally the Negro bore the usual disabilities which color prejudice created; in other fields, notably those of music and the struggle for greater educational opportunity, a distinctly encouraging upswing was shown.

In the business upturn during the year fully 95 per cent of the jobs thus provided were given to white Americans. The result in many cities was an increase in the relative percentage of Negroes on relief rolls. Continuation of the vigorous campaign of the Congress of Industrial Organizations against the color bar offered the one bright spot in industry for the Negro. The American Federation of Labor continued its old policy of discrimination. The outstanding example of this during the year was in the yards of the Tampa Shipbuilding and Engineering Co. The drydock in this

plant was erected through a loan from the RFC and its contracts were exclusively for the federal government, the U.S. Maritime Commission having awarded the plant a contract to build eight ships at a total cost of seventeen million dollars. A successful strike, led by thirteen workers, twelve of this number being Negroes, focused attention of the American Federation of Labor on the plant and led them to organize it. But Negroes were excluded from the unions and a closed shop contract signed by the unions with the plant management resulted in the discharge of skilled, semi-skilled, and unskilled Negro workers.

The Negro American continued to play his usual role in music and the theater. Marian Anderson, great contralto—of whose voice Arturo Toscanini said, "A voice like yours is heard only once in a hundred years!"—continued to sing to packed audiences in every part of the country, including the deep South. The most dramatic event of the year in music circles was Miss Anderson's concert before 75,000 people from the Lincoln Memorial on Easter Sunday in the nation's capital. In June Miss Anderson was presented with the 24th Spingarn Medal at the Thirtieth Annual Conference of the National Association for the Advancement of Colored People at Richmond, Va., the presentation being made by Mrs. Franklin D. Roosevelt in the presence of a huge and distinguished audience.

In August a new and great Negro woman singer appeared on the horizon when Dorothy Maynor sang with the Boston Symphony Orchestra during the Berkshire Symphonic Festival. Sergei Koussevitsky called Miss Maynor "The American Kirsten Flagstad." In November Miss Maynor made her formal debut at Town Hall in New York City to an audience of distinguished music lovers and critics from all parts of the United States and received an ovation.

Two movements of a symphony by Clarence Cameron White, Negro violinist and composer, were played by the Reading Symphony Orchestra under the direction of Hans Kindler.

Richmond Barthe, distinguished Negro sculptor, was the first of his race to have a one-man show at a 57th Street gallery in New York City when an exhibition of his work was shown at the Arden Galleries. A symbolic piece by Augusta Savage, Negro sculptor, bearing the title, "Lift Ev'ry Voice and Sing," was placed in front of the Fine Arts Building of the New York World's Fair 1939, and two paintings by Sargeant Johnson, Negro painter, were exhibited at the San Francisco World's Fair.

In the theater *The Hot Mikado*, with the imitable Bill Robinson, played Broadway and later at the New York World's Fair. Ethel Waters, famed singer of "Blues," made her debut as a dramatic actress in *Mamba's Daughters*. Seldom has an actress within recent years been so lauded by critics and public. Paul Robeson returned to the United States shortly after the outbreak of the war to open in *John Henry*. A swing version of Shakespeare's *Midsummer Night's Dream*, starring Louis Armstrong, Benny Goodman, and Maxine Sullivan, opened in New York City at the Center Theater in Rockefeller Center.

In the field of education notable progress was made in the struggle of the Negro against inequalities in tax-supported institutions. The decision of the U.S. Supreme Court in the case of *Gaines v. University of Missouri* (305 U.S. 337), rendered Dec. 28, 1938, in which the Supreme

Court ordered Missouri either to supply a law school for Negroes equal to that of the University of Missouri Law School or to admit Gaines to the tax-supported University of Missouri School of Law, caused profound repercussions in the educational world, white and Negro, of all those states which maintain separate schools for the education of Negroes. The dictum of the Court made a complete reorientation of the educational systems of these states inevitable. In Maryland, William Murphy, Oberlin College graduate, was admitted to the law school of the University of Maryland, the third of his race to be admitted as a result of court decisions in that state. In Kentucky, Governor Chandler appointed a commission of distinguished Negro and white educators to make a study in that state of the effect of the Supreme Court decision. That commission in November issued its report in which it recommended that legislation and legal action be instituted to bring the practices in Kentucky into harmony with the United States Supreme Court decision in the Gaines case. Other states sought to devise plans either for volunteer scholarships for qualified Negroes to attend institutions of their choice outside the states or attempted to work out suitable plans for the establishment of separate graduate and professional schools for Negroes. In Atlanta a meeting was held in October of white educators who announced their determination to devise a plan for a series of "regional" graduate and professional schools for Negroes. There was doubt, however, that such a plan would be either economically possible or acceptable to the courts in view of the Supreme Court's decision that each state must meet its obligations within its own borders to supply equal accommodations to white and Negro students.

Judge W. Calvin Chesnut handed down a decision on Thanksgiving eve of far-reaching importance with respect to the differential in salaries paid Negro and white teachers in Anne Arundel County, Md. Suit had been brought by Walter Mills, a Negro principal, asking that he be paid the same salary paid to white principals with the same size of school and with the same background and educational experience. Judge Chesnut's decision in Mills' behalf ordered such equalization of salaries, the differential for Anne Arundel County being \$45,000 annually. It is estimated that the differential throughout the state of Maryland is in excess of \$600,000 a year and for the 19 southern states in which separate schools are maintained the discrimination against Negro teachers costs them between twenty- and twenty-five million dollars. The National Association for the Advancement of Colored People, which instituted these suits upon request of the plaintiffs, announced its determination to institute similar suits in every state where such differentials exist.

William H. Hastie, first Negro to be appointed a federal judge, resigned during the year to become Dean of the Howard University Law School at Washington. Another Negro jurist, Herman E. Moore of Chicago, was appointed by President Franklin D. Roosevelt to succeed Judge Hastie in the Virgin Islands. Also during the year the first Negro woman to become a judge was appointed in the person of Jane M. Bolin of New York City, who was appointed by Mayor F. H. LaGuardia as Judge of the Domestic Relations Court.

The year 1939 saw the Negro increasingly conscious of the importance of the ballot and a steady

growth in the recognition of the power of the Negro vote in the seventeen states (with a total electoral vote of 281) in which the Negro potentially held the balance of power. A steady growth in political independence of the Negro vote was largely responsible. Both of the major political parties began active campaigns to enlist the support of this vote in the 1940 presidential elections. That increased power and recognition manifested itself in many parts of the South where Negroes hitherto have been disfranchised. In various cities in Texas, Louisiana, Virginia, North Carolina, and Alabama the number of Negroes who qualified and registered increased remarkably and peacefully. In other states, however, efforts to register on the part of Negroes were met with threats of mob violence. In Greenville, S. C., a young Negro who led the movement to induce his people to qualify, register, and vote was threatened repeatedly, as were other Negroes, by the Ku Klux Klan. When these threats proved useless the young Negro was convicted on a charge of having "telephoned a white girl for a date." Appeal from that conviction was pending at the year's close. In Miami, Fla., the Ku Klux Klan also attempted to intimidate would-be Negro voters. The results were somewhat surprising in that the threats of violence resulted in trebling of the number of Negro voters. Intelligent white southerners became increasingly aware during the year of the harm done to them as well as to Negroes by the poll tax. In Tennessee a suit was instituted by the Southern Conference on Human Welfare to test the validity and constitutionality of such a tax while in San Antonio, Tex., the Mayor of that city, Maury Maverick, was arrested at the instigation of political enemies on a charge of having paid the poll tax of white members of the I.L.G.W.U. The trial, however, ended in prompt acquittal.

In the world of sports Negroes continued to play a notable role. Joe Louis kept the heavyweight championship, defeating Bob Pastor, Tony Galento, John Henry Lewis, and Jack Roper. Even more than his prowess as a boxer did Louis' sound common sense and clean living impress themselves upon the public. Henry Armstrong successfully defended his welterweight championship but lost the title of lightweight champion to Lou Ambers in New York City in August in a decision which was bitterly criticised by sportswriters and the public.

In college football Kenney Washington, Jackie Robinson, and Woodrow Wilson Strode, particularly the first two named, gained nation-wide prominence by the brilliance of their performances on the U.C.L.A. team, as did Negro stars on other college teams. The remarkable growth of sportsmanship was manifested when it appeared that U.C.L.A. might be the Coast team to play in the Rose Bowl at Pasadena, Calif., on New Year's day. As the University of Tennessee team was certain to be invited there was widespread discussion as to whether or not the Tennessee team would play against a team with three Negro stars. But when queried, both the coach and the team of the University of Tennessee expressed complete willingness to play U.C.L.A. But state legislators bitterly opposed such sportsmanship. Embarrassment was saved the legislators, however, when in the final game of the season the tie between U.S.C. and U.C.L.A. led to the former being chosen to play in the Bowl. An increasing number of southern colleges, among them Texas

Christian College and the Davis Elkins College teams, played northern schools which had Negro players, following the example of recent years of the University of North Carolina. The University of Florida and Auburn, however, refused to play Boston College unless its Negro star halfback, Lou Montgomery, was kept on the bench, which was done. Negroes continue to be barred from professional baseball and football.

WALTER WHITE.

NEJD. See *ARABIA* under *Saudi Arabia*.

NEOARSPHENAMINE. See **MEDICINE** AND **SURGERY**.

NEPAL, *ne-pôl'*. An independent kingdom in the Himalayas between Tibet and British India, under British influence. Area, about 54,000 square miles; estimated population (1938), 5,600,000. Capital, Katmandu (population, about 80,000). The chief imports are cotton goods and yarn, sugar, salt, spices, and metals. The principal exports are jute (4500 metric tons, 1938), rice and other grains, hides, oilseeds, ghee, cattle, and lumber. The yearly gross revenue is estimated at 15,000,000 rupees (British Indian rupee = 1.24 Nepalese rupees). The government is a military oligarchy. Reigning sovereign, Tribhubana Bir Bikram (succeeded, Dec. 11, 1911).

Lieut. Gen. Sir Joodha Shumsher Jang Bahadur, Prime Minister and Marshal of the Kingdom, announced (Sept. 13, 1939) that Nepal would support Great Britain in the war with Germany.

NETHERLANDS, THE. A constitutional monarchy of northwestern Europe. Capital, Amsterdam. Seat of the government, The Hague ('s Gravenhage). Sovereign in 1939, Queen Wilhelmina, who succeeded to the throne on Nov. 23, 1890.

Area and Population. The area, including water belonging to municipal territories, is 13,515 square miles. The population on Jan. 1, 1939, was estimated at 8,722,000 (7,935,565 at the 1930 census). About 94 per cent of the people dwell in communities of 2000 or more. Living births in 1938 numbered 178,413 (20.6 per 1000); deaths, 74,044 (8.5 per 1000); marriages, 66,968 (7.7 per 1000). Estimated populations of the chief cities on Jan. 1, 1939, were: Amsterdam, 793,222; Rotterdam, 612,375; The Hague ('s Gravenhage), 494,773; Utrecht, 163,589; Haarlem, 137,507; Groningen, 120,010; Eindhoven, 111,188; Tilburg, 95,142; Nijmegen, 94,102; Enschede, 90,291; Arnhem, 88,996; Leiden, 77,009.

Colonial Empire. The colonial possessions of the Netherlands are situated in Asia, South America, and the Caribbean Sea; and are treated elsewhere in the **YEAR BOOK** under the headings of **NETHERLANDS INDIES**, **CURAÇAO**, and **SURINAM**. The total area is 793,354 square miles; total population was estimated at 7,005,000 in 1938.

National Defense. Every male citizen is liable to military service. On Nov. 1, 1939, the army consisted of 500,000 active soldiers and 160,000 reservists, according to the Adjutant General's Office, Washington, D. C. The air force comprised 600 men and 330 aircraft. The navy (at the beginning of 1939) was composed of 1 coast defense ship, 4 cruisers, 3 armored gunboats, 3 escort vessels, 8 destroyers, 5 seagoing torpedo boats, 21 submarines, 1 submarine depot ship, 9 minelayers, and 16 minesweepers. See *History* below.

Education and Religion. There is practically no illiteracy. The school enrollment in 1937-38 was: Kindergartens, etc., 213,198; elementary,

1,240,772; secondary (including day and night commercial schools), 79,368; trades, crafts, domestic science, minor arts (1936-37), 134,788; agriculture (1935-36), 29,668; universities and colleges, 12,387. According to the 1930 census, there were 2,890,022 Roman Catholics, 2,732,333 members of the Dutch Reformed Church, 876,958 other Protestants, 111,917 Jews, 10,182 Jansenists, 169,575 belonging to other creeds, and 1,144,393 professing no religion.

Production. There were 2,298,000 acres of arable land in the May, 1938, census. Livestock at that time consisted of 2,763,000 cattle; 1,512,000 swine; 654,000 sheep; 312,000 horses; and 30,521,000 poultry. Yields of the chief cereals in 1939 (in metric tons) were: Wheat, 362,000; barley, 130,000; rye, 554,000; oats, 332,000. Butter production in 1938 was 222,444,000 lb.; cheese, 275,355,000 lb.; condensed milk, 345,020,000 lb.; powdered milk, 63,933,000 lb. The potato harvest in 1938 was 103,632,000 bu.; sugar beets, 1,520,000 metric tons; beet sugar (1938-39), 205,000 metric tons; flax, 42,935,000 lb.

Mineral production in 1938 (in metric tons, unless otherwise indicated) was: Coal, 13,488,000; lignite, 171,000; salt, 166,000; cement, 456,000; pig iron, 299,000 (year ending Mar. 31, 1938); zinc (smelter), 25,300; tin (smelter), 27,000; sulphuric acid, 525,000; superphosphates of lime, 570,000. The 1938 output of other products was: Margarine, 71,400 metric tons; beer, 36,244,000 gal. (U.S.); wool and mohair, 1300 metric tons; rayon, 9000 metric tons; wood pulp, 105,000 metric tons; electricity, 2,396,000,000 kilowatt-hours. Shipping launched in 1938 totaled 239,800 gross tons. Total number of registered unemployed on Jan. 1, 1939, was 431,181 (437,400 in 1938).

Foreign Trade. Imports in 1938 (exclusive of gold and silver coins and bullion) totaled 1,414,825,000 florins (1,550,123,000 in 1937); exports, 1,039,156,000 florins (1,148,110,000 in 1937). The chief 1938 exports in the order of their value were: Textiles; coal and coke; butter; tin; iron and steel; cheese. Holland's exports (with their value in florins) were assigned principally to the following countries in 1938: Great Britain, 223,987,000; Germany, 155,887,000; Belgium and Luxemburg, 105,719,000; Netherlands Indies, 99,792,000; France, 60,205,000; United States, 37,139,000. Imports (valued in florins) originated chiefly in the following: Germany, 300,898,000; Belgium and Luxemburg, 162,224,000; United States, 153,370,000; Great Britain, 115,145,000; Netherlands Indies, 101,720,000; France, 64,952,000. See **IMPORTS AND EXPORTS**.

Finance. Total budget expenditures for 1940 (including extraordinary items) were estimated at 1,015,000,000 florins; and receipts at 770,000,000. The 1939 budget estimated expenditures at 1,008,740,000 florins and receipts at 627,503,000. The total debt in current U.S. dollars was \$2,011,000,000 on Jan. 1, 1939. The florin (guilder) had an average exchange value of \$0.5505 in 1937, \$0.5501 in 1938, \$0.5334 in 1939.

Transportation. At the end of 1938 the Dutch railways, operated by two state-controlled private companies, had 2109 miles of line in operation. There were 16,031 miles of paved highways in 1939 (see **ROADS AND STREETS**). Inland waterways (aggregating about 5200 miles in length) transported two-thirds of the nation's freight. There were about 3,250,000 bicycles in use in 1938. The Royal Netherlands Airlines (K. L. M.) in 1938 carried 161,600 passengers, 1,190,913 lb. of mail;

2132 tons of merchandise and baggage. After the outbreak of the European war in September, 1939, services to London, Paris, and Berlin were discontinued; and the thrice-a-week flights to the Netherlands Indies were reduced to twice-a-week, with the European terminus at Naples, Italy. The Netherlands merchant marine on June 30, 1938, comprised 1482 vessels of 2,855,382 gross tons. The gross tonnage of vessels entering Netherlands ports during 1938 totaled 43,092,000.

Government. The hereditary monarchy rests upon a constitution of 1814, as revised from time to time. The legislative power rests in the sovereign and a parliament, the States-General. This consists of an upper chamber of 50 members, elected by the provincial states (elected representative bodies in the several provinces), for terms of six years; and of a lower chamber of 100 members, who are elected for terms of four years, by general adult suffrage under a system of proportional representation. The cabinet, though not specifically a constitutional institution, is in practise accountable to the parliament and falls without the latter's support. The Premier is chosen by the sovereign, normally out of a political group commanding the needful parliamentary majority, and he in turn proposes to the sovereign the other ministers. The Premier at the end of 1939 was Dirk Jan De Geer.

HISTORY

Peace-time Difficulties. The outbreak of a major war in Europe, at the outset of September, abruptly swept the Netherlands into a new situation, and out of a long-continued era of peace. Prior to the start of the war the Netherlands had to deal with new expenditure on behalf of the unemployed; additional provision for defense by land and sea; the decision whether to meet the cost of its additional undertakings by taxes or borrowing; a serious consequent change of ministry and parliamentary alignment; and more or less financial disturbance resulting from the fall of a great banking house.

Colijn's Resignation. The Premier at the beginning of 1939 was Dr. Hendrik Colijn, whose ministry depended for part of its support on the Catholic party. The government ordered, late in February, the construction of two 8300-ton cruisers, mainly as part of a plan for strengthening the naval defense of the Netherlands East Indies (q.v.).

Because of the apparent indications that Germany entertained hope of acquiring some of the Netherlands' rich East Indian possessions, there was an intensified demand early in the year for augmenting the naval forces in the Far East. The advocates of this policy began, in particular, to advocate the construction of three swift 26,000-ton battle cruisers. The unsatisfactory state of economic activity threw upon the government the task of caring for an increased number of unemployed persons. For this purpose new and costly schemes of public works were proposed. The more conservative group in the cabinet, including Colijn himself, sought to avoid governmental borrowing, on account of additional expense, by resort to retrenchment and additional taxation. Leaders in the Catholic party, on the other hand, judged that an increase in the public debt would be preferable. Some of the members of this party who were serving in the cabinet broke with Colijn. He himself assumed the duties of Minister of Finance late in May, after the resignation of the holder of this post, but difficulties increased, and Colijn was re-

lieved of his charge by the Queen at his request, July 8.

Dr. Dionysius Koolen, a Catholic member of the Council of State, tried to form a new cabinet. He failed in this task, and Dr. Colijn consented on July 22 to try again to form a ministry acceptable to the parliament. There resulted a so-called business cabinet formed largely outside of the parties of which the support was sought, and designed to serve as a stop-gap. The new Colijn Ministry was rejected by the Lower House, July 27. Dirk Jan De Geer thereafter formed a ministry that included members of three parties—the Catholic, the Social Democratic, and the Christian Historical. The coalition of the Catholics and the Social Democrats was judged anomalous; the arrival of the Social Democrats to a part in sponsoring a cabinet set a new precedent. De Geer's government took office on August 9, as the well recognized advocate of borrowing freely against extraordinary expense.

Mendelssohn Bank Crash. An economic accident of some severity, the suspension of Mendelssohn and Company, long-established and powerful banking firm of Amsterdam, occurred on August 11, just after the installation of De Geer's cabinet. The bank closed on the day after the death of its managing director, Fritz Mannheimer. It had recently been engaged in floating loans to the French Government. Its liabilities were later determined as 135,127,379 florins; the amount of its insolvency was 40,524,486 florins. Its relations with finance in the Netherlands were sufficiently extensive to disturb financial confidence for a time, but no spread of the difficulty occurred during the year. As the war broke out three weeks after the failure, no general liquidation of the Mendelssohn firm's assets could be effected during 1939.

Work was carried on steadily upon a dike, to extend 15 miles in Lake Yssel (the remainder of the Zuyder Zee), between the main shore and Urk Island, so as to inclose about 100,000 acres for drainage and later cultivation. Late in the year the dike was reported as almost finished.

Problems of Neutrality. The declaration of war between Germany and the allied British and French governments put the Netherlands in serious difficulties. The country's trade by sea had to face the obstacles created by Great Britain and Germany with the object of blockading each other's maritime commerce. Goods readily procurable in other times became hard to get. The hazards and hindrances of navigation grew from month to month. The need to maintain effectual neutrality toward either side in the war was imposed by the necessity of avoiding whatever would justify the other side in complaint against the Netherlands and in possible consequent interference with her. While the neighboring belligerents settled down to dormant war on land they carried on active warfare at sea and particularly on waters that lay not far off the Netherlands' coasts. Rotterdam, moreover was one of the normal points of arrival and departure for trade to and from Germany. Hence the Netherlands lost not only in commerce of their own but in shipping activity on Germany's account. Inactivity in the maritime trades helped cut down the country's livelihood, while the expense of keeping armed forces on foot against encroachment by land and air, the support of the unemployed and the scarcity of many sorts of goods all tended to raise public expenditure.

Emergency Measures. The government's chief specific steps for meeting the stress of the war began with an order of August 28 mobilizing

the army and navy to the number of 300,000; next came the proclamation of a state of emergency on September 1, two days in advance of the British and French declaration of war. The Netherlands announced its neutrality on the 3rd. An act giving the government control over imports was passed on September 9. Other measures, legislative or executive, raised the banks' rate of interest, in order to check the exportation of funds; restricted the exportation of goods; created monopolies for some sorts of exports and imports; started the control of production and distribution in some branches of domestic industry, and, by an act of October 12, subjected the importation of certain designated products to limitation by license.

A patrol of the air over the country's territory, by armed airplanes, was established early in the war, and anti-aircraft guns were posted so as to fire on belligerents' airplanes seeking to fly over the Netherlands. Both the patrols and the guns on the ground engaged, on a number of occasions, trespassing airplanes. Some of these were reported as German, others of unknown nationality. Roads were elaborately barricaded at the German border, in such wise as to admit of their being quickly closed, in case of a threat of invasion, but the routes between the Netherlands and adjoining countries were kept open, and commerce over them continued. A long-contemplated plan to flood low lands in strategic areas as a barrier to invasion was put in effect, to some extent, in September and after; dikes were opened at certain points, ostensibly to test the plan, or elsewhere, to saturate the ground in order that flooding might be effected later with less delay, if needed; such operations were noted particularly in the area of Amersfoort, near the southern end of the Zuyder Zee.

Friction with Germany. Relations with Germany were disturbed from time to time, chiefly by reported concentrations of German troops near the Dutch border in October and by the German government's dissatisfaction, in November, with the Netherlands' failure actively to oppose the British blockade against German exports sent to sea from the Netherlands' ports. Germany's planting of mines in the waters off the coast of England gave the Netherlands serious cause for complaint, since a very great part of this country's trade by sea passed through these waters. The sinking of the Dutch liner *Simon Bolivar*, of 8304 tons, on November 18 in the North Sea, among a number of vessels sunk by explosions about the same place and time, gave the impression that German mines had been placed in areas that the neutrals had been allowed to suppose free of such risk; but the German government denied having mined the area in question, and the subject dropped out of immediate controversy. Up to Dec. 31, 1939, the Netherlands lost eight ships of 39,419 gross tons through mine and submarine warfare.

The Venloo incident, a seizure of two British secret agents at the frontier, by a German party, November 9, added to the complication of relations with Germany. According to a Dutch communiqué of the following day the two men were attacked on getting out of an automobile at a point on the Dutch side of the frontier; the attack was reinforced by a German automobile, which entered from German territory and drew the captured men and their automobile into Germany. A Dutch intelligence officer, Lieutenant Klop, was killed in the affray. The two abducted men, Sigismund Byne Best and Capt. Richard Henry Stevens, were imprisoned in Germany. They had apparently been

lured to the frontier by communication through a small radio set, from German agents pretending to be members of an anti-Hitlerite group.

Other Events. For the joint effort of the Belgian King and Queen Wilhelmina of the Netherlands to induce the belligerents to negotiate peace, and other Belgian-Dutch collaboration as neutrals, see BELGIUM under *History*. The dreaded German move to overrun the Netherlands did not occur in November. Apprehension at the time caused considerable flight of liquid capital, compelling the government's exchange-stabilizing fund to pay out, in the second week of November, about 45,000,000 florins to support the foreign value of the country's money. For the divers unusual costs that the government had to meet in the later months of the year, it was able for a time to borrow from the banks. In December, however, it sought to float a public loan of 300,000,000 florins in bonds, to cover floating debt and the cost of the recent defensive measures. Premier De Geer announced, December 14, that the subscriptions to the issue, thus far received, had fallen short of the proposed total by about 140,000,000 florins and hinted the possible need of obligatory subscriptions to the government's issues.

See also MILITARY PROGRESS; NAVAL PROGRESS. **NETHERLANDS GUIANA.** See SURINAM.

NETHERLANDS INDIES. A group of large islands in the East Indies forming a colony of The Netherlands. Capital, Batavia, on the island of Java.

Area and Population. The area, population at the 1930 census, and population density of the various islands is shown in the accompanying table.

Group of islands	Area, sq. miles, 1930	Popu- lation, 1930	Density per sq. mile
Java and Madoera	51,032	41,718,364	817
Sumatra	164,148	7,677,826	47
Riouw-Lingga	12,235	298,225	24
Bangka	4,611	205,363	45
Biliton	1,866	73,429	39
Borneo:			
West district	56,664	802,447	14
South and east districts	151,621	1,366,214	9
Island of Celebes:			
Celebes	38,786	3,093,251	80
Manado	34,200	1,138,655	33
Molucca Islands and New Guinea	191,682	893,400	5
Timor Archipelago	24,449	1,657,376	68
Bali and Lombok	3,973	1,802,683	454
Total	735,268	60,727,233	83

The estimated population on Dec. 31, 1937, was 67,400,000. Over 92 per cent of the population is rural. Living births among the natives of Java and Madoera in 1937 numbered 1,285,659; deaths, 852,486. The 1930 census populations of the chief cities, all of which were in Java except as noted, were: Batavia, including Meester Cornelis, 533,015; Soerabaja (Surabaya), 341,675; Semarang, 217,796; Bandoeng, 166,815; Soerakarta, 165,484; Djokjakarta (Jogjakarta), 136,649; Palembang, in Sumatra, 109,069.

Education and Religion. According to the 1930 census, there were 4,296,579 literate persons, of whom 400,877 were able to write Dutch. School attendance in 1936-37 was: Primary vernacular, 1,821,620; elementary (in Dutch language), 140,360; advanced elementary and secondary, 15,673; university, 1020.

The natives are predominantly Moslem, but

there are several million converted Christians and Animists and about a million Buddhists.

Defense. Defense forces (1938) included a colonial army of 1062 officers and 31,467 men; militia and reserves totaling 1477 officers and 29,098 men; three small native armies; a naval force of three light cruisers, 12 submarines, 8 destroyers, and numerous smaller vessels with a personnel of 2969 Europeans and 2469 natives; and an air force of over 100 planes (mostly seaplanes). All defense establishments were materially strengthened during 1938 and 1939.

Production. Agriculture and mining are the chief occupations. In 1937 natives cultivated 16,457,000 acres; European estate owners, 2,715,866 acres. Chief crops (in metric tons): Sugar (1938-39), 1,550,000; coffee (1938-39), 104,000; cacao (exports, 1937-38), 1600; rice (Java and Madoera, 1937-38), 5,941,600; corn (Java and Madoera, 1937-38), 1,983,700; tobacco (1937-38), 53,500; tea (1938), 80,912; cinchona (1938), 10,966; copra (net exports, 1938), 580,700; groundnuts (Java and Madoera, 1938-39), 282,400; palm oil (net exports, 1938), 220,800; palm kernels (1938), 21,300; crude rubber (exports, 1938), 303,000. Mineral production (1938) in metric tons: Coal, 1,457,000; crude petroleum, 7,398,000; tin, 28,768. Livestock (1937): 4,413,606 cattle, 3,197,354 buffaloes, 671,362 horses. There were 5904 factories and workshops in 1936, mostly engaged in processing agricultural and mineral products for export.

Foreign Trade. Merchandise imports in 1938 totaled 485,520,000 florins (498,480,000 in 1937); exports, 693,600,000 florins (988,440,000). The Netherlands supplied 22 per cent of all Netherlands Indies imports by value in 1938 (12 per cent in 1933); Japan, 15 per cent in 1938 (25 in 1933). European countries furnished about 50 per cent of all 1938 imports; Asiatic countries, 32 per cent. The Netherlands, Singapore, United States, United Kingdom, and Japan are the principal export markets, in order of importance. See IMPORTS AND EXPORTS.

Finance. Budget estimates for 1939 were: Receipts, 560,856,882 florins; expenditures, 621,025,072. For 1938, actual revenues were 508,131,000 florins (567,958,062 in 1937). The public debt increased from 1,360,087,000 florins on Dec. 31, 1937, to 1,368,127,000 on Dec. 31, 1938. The florin (guilder) averaged \$0.5501 in 1938.

Communications. At the beginning of 1938 state and private railways and tramways totaled 4630 miles. Railway receipts in 1938 were 53,523,000 florins. The Royal Netherlands Indies' Airways, operating inter-island services, carried 20,275 passengers, 211,646 lb. of freight, and 112,652 lb. of mail (1938). In addition the islands were served by the Royal Dutch Airline and Imperial Airways. A total of 11,121 steamers of 11,899,638 tons entered the ports in 1937. See ROADS AND STREETS.

Government. The Governor-General and his advisory council are appointed by the Queen of The Netherlands. The Volksraad (assembly of elected and appointed delegates) has limited legislative powers. Governor-General, Jhr. Dr. A. W. L. Tjarda van Starkenborgh Stachouwer.

History. In his annual message to the opening session of the Volksraad (June 15, 1939) the Governor-General stated that the industrialization of the islands with Dutch capital and native labor was making them more independent of world conditions. Despite large budget deficits, he urged

further expenditures for native colonization of the less developed islands. He estimated the deficit for 1939 at 36,000,000 florins and proposed tax increases to reduce the anticipated 1940 deficit to 30,000,000 florins. In January it was announced that preparations had been completed for the exploitation of important nickel deposits on Celebes Island near the coast of Bingkoka Bay.

With the outbreak of the European war, there was a marked dislocation of the islands' foreign trade and a general rise in prices. The government assumed emergency powers over shipping and took measures to control speculation and curb profiteering. Nominal price increases were allowed except on necessities of life, services, and rentals. A compulsory food raising law was passed and the establishment of new industries to supply goods formerly purchased abroad was encouraged.

See EXPLORATION.

NEUTRALITY. The outbreak of war in Europe at the outset of September put three and soon yet another of the chief armed nations into the position of belligerents, declared or de-facto; it impelled governments not participating in the conflict to measures for maintaining their neutrality; recollection of the European war of 1914-18 carried conviction that governments seeking to protect their people by holding to the neutral status would need skill and attention in maintaining the role.

Nations' problems of neutrality differed, in some main respects, with the circumstances of each one's case. The less populous countries of central and northern Europe had to deal particularly with the risk of the armed entry of one belligerent for the purpose of gaining strategic advantage over an adversary, and of the consequent entry of the adversary seeking to prevent such advantage. In southern Europe, Italy, closely associated with the German Reich, yet preferring not to take arms against Great Britain and France, offered less difficulty; moreover, Italy still had free access to the Mediterranean, little troubled by naval impediments to maritime commerce. In Latin America, on the other hand, the existence of powerful colonies of people connected by origin and sympathy with one or another belligerent coupled with the need to ship products and receive necessities in which Latin Americans had dealt with countries now at war, complicated the task.

The United States' problem differed to some degree from that of other neutrals. Its remoteness from the scene of war and its naval strength assured the safety of its territory; its foreign relations did not bind it particularly to any one nation; its external commerce counted less heavily in its economy than such commerce counted in the case of most neutrals. Yet because of the extent and diversity of the country's economic relations with other lands a widespread war must affect its interests in a multitude of ways. While no single foreign origin stamped the thought of any group strong enough to impress its will on the rest of the Nation, the consciousness of foreign antecedents bent the sentiments of a great part of the population one way and another. The loss of National wealth subsequently to 1929 and the social stresses that had grown apparent since that time prompted the feeling that the country would run internal risk if involved in the war. Thus among proper objects of the United States' neutrality the precluding of occasions for belligerents' acts harmful to National interests assumed a high importance. The problem of main-

taining neutrality, moreover, derived some of its difficulty from the existence of a Federal statute forbidding the sale of arms and munitions to a belligerent (Neutrality Act of 1937; see YEAR BOOK, 1937, p. 756, col. 2).

Action at Outbreak of the War. The German Reich began open hostilities against Poland on September 1. The British government, in rejoinder, declared war on the Reich on September 3; the French government announced a state of war on the same day. President Roosevelt proclaimed, September 5, the neutrality of the United States in the war of these nations. India, Australia, and New Zealand, which promptly followed the United Kingdom's lead, were included, and later, Canada.

The President's proclamation of the neutrality of the United States followed the model of similar proclamations issued on the occasions of earlier wars; it made the long-established prohibition as to raising troops or fitting out warships for a belligerent, restricting the action of belligerents' armed ships in territorial waters and warning citizens against unneutral acts; it did not put in force the provisions of the Neutrality Act of 1937. A separate proclamation imposed the restraints that this act required; citing the act and the existence of the state of war, this proclamation forbade, as the act required, the exportation to any belligerent therein, by any person in the United States' jurisdiction, of arms, ammunition, or implements of war; there followed a list of arms, ammunition, vessels, aircraft, parts of any of these, and chemicals, as to which the prohibition applied.

Conditions at the Time. When these proclamations were issued they, and particularly the second, bore closely on several matters of importance to the country. The British and French, foreseeing war as likely, had lately placed in the American market their orders for aircraft and other material in huge quantity. As yet, comparatively small shipments of the ordered goods had been made. Some factories at work on such orders, even though expecting the amendment of the Neutrality Act, had to suspend operation and throw people out of work. On the other hand the manufacture of steel made a quick and extended advance in the first weeks of the war, and expectation of higher exports of commodities sent the prices of foodstuffs and cotton sharply upward for a limited time, while an expectation of the return of private demand for credit and consequent collapse of the Federal financial advantage of money to borrow at 2 per cent or less, produced a brief but disturbing sinkage of the market for Federal and other public obligations. Among occurrences abroad the torpedoing and sinking of the British liner *Athenia*, with a loss of 28 out of some 300 Americans on board (September 3) put the temper of the American public to its first serious strain. A Canadian declaration of war on Germany (September 10) put an end to the possibility that Canada might receive exports forbidden to the other parts of the British empire. The military concurrence of Russia in the German invasion of Poland (September 17) brought into the war another actual, if not avowed, belligerent and raised the question whether to apply the Neutrality Act to Russia.

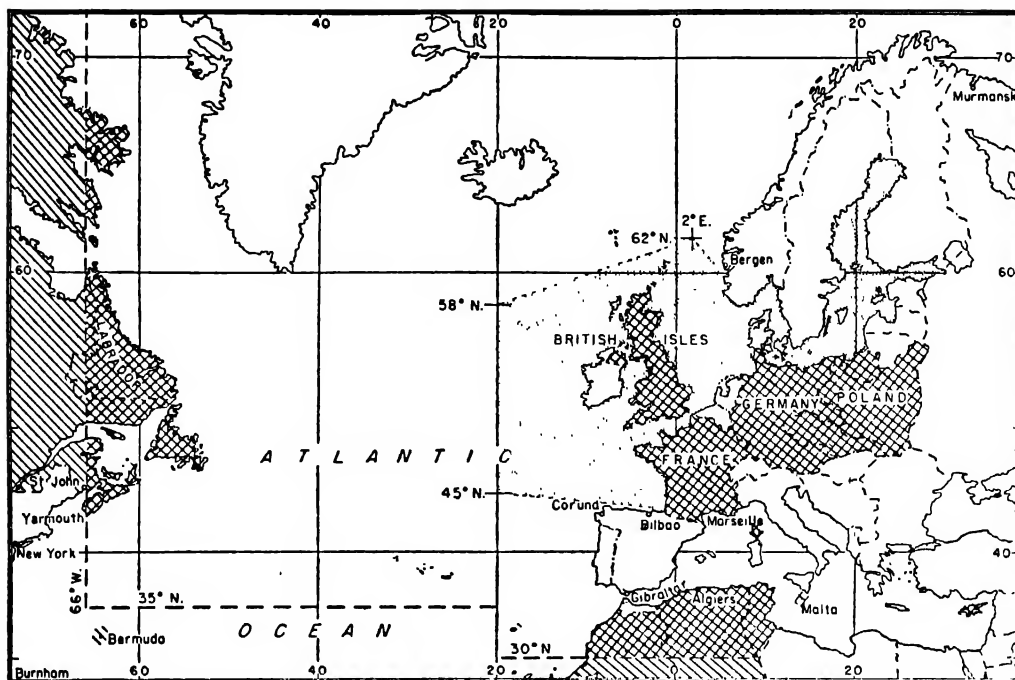
Neutrality versus Exports. The United States' exports for September came to \$283,000,000 or thereabout and thus exceeded those of August by about 16 per cent. This showed that the first

month of war had given the United States a substantially bigger market abroad than the last month of peace; and that, despite the termination of direct trade with Germany and the stoppage of shipments of arms to the British and French in virtue of the proclamations. A presumption arose that trade with Europe, so long as Germany was gripped by the British naval blockade, must mainly signify trade with the adversaries of Germany; that in particular, should Congress permit shipments of materials of war in any manner, the resulting trade would be with Germany's adversaries and, in its effect, an aid against Germany. The point had its significance at a moment when Congress was assembled in special session, summoned by the President for the specific purpose of removing the statutory barrier against the exportation of materials of war.

Amendment of the Neutrality Act. The President issued, September 13, a proclamation to convene a special session of Congress on September 21; he told the press that he expected to ask only the revision of the Neutrality Act. His message to Congress (September 21) dealt wholly with the revision of the system of statutory neutrality; it expressed the President's regret that he had signed the existing act, cited subsequent reference on his part to the need for altering it—an argument against the view of some critics that the proposal of revision had come only since the blockade of Germany; and condemned embargoes as historically likely to bring the nation maintaining them into war, rather than to safeguard it; the existing law was declared to "give a definite advantage to one belligerent as against another," since "a sea-power antagonist would be weakened through denial of its ancient right to buy anything anywhere." The President made no effort in his message to bring about the removal of the prohibition against the transportation of materials of war in American ships, nor of that against loans to belligerents.

Congress passed, November 3, the Neutrality Act of 1939, signed November 4. It provided about what the President had asked. The Senate voted the bill by 55 in favor; opposed, 24; the vote in the House was, respectively, 243 and 172. The text of the act appeared in the *New York Times*, Nov. 4, 1939, p. 6; and in *International Conciliation*, December, 1939 (No. 355), p. 609. Section 2 of the act prohibited American vessels' carrying passengers, articles, or materials to any belligerent State so proclaimed by the President, but made specific exception of most of the Western Hemisphere and of the Pacific and Indian oceans. Other nations' vessels were allowed to transport goods to belligerents only under detailed restrictions to the general effect that such goods should have passed out of the ownership and interest of any citizen of the United States and into that of "some foreign government, agency, institution, association, partnership, corporation, or national." The old law, with its prohibition of exports of war materials, was repealed. In effect, the act excluded the ships of the United States from transportation to belligerents and allowed the exportation of all goods to belligerents, by ships of any other flag than the American, once the goods had been paid for and no American interest in them remained—in current phrase, exportation under the cash-and-carry system. Foreign ports in the Americas, including St. John in eastern Canada, were left open to ships of the United States (see p. 554).

The repeal of the embargo was accomplished



Courtesy Foreign Policy Association
and F. Irvine Burnham

RESTRICTIONS ON TRADE AND TRAVEL UNDER NEUTRALITY ACT

The Neutrality Act of 1939 and proclamations and regulations issued thereunder barred: (1) the transport of passengers or cargo by American vessels and aircraft to belligerent countries *cross-hatched* on the map, and (2) American vessels and American citizens traveling by any surface vessel or aircraft from waters, designated as "combat areas," *shaded with dots* on the map. American vessels (other than aircraft) were authorized to transport mail, passengers, and any article or materials except arms, ammunition, and implements of war to those areas of belligerent territory shaded by *single diagonal lines*.

only after protracted opposition in the Senate. Borah of Idaho had told the country, even in advance of the session, that lifting an embargo "now war is in progress" would "constitute intervention." Clark of Missouri, a Democrat and one of the fathers of the embargo, persistently attacked its removal as a "warlike" act. Another formidable opponent, Vandenberg of Michigan, represented the views of the partisan minority—most of the Senate's Republicans—marked by distrust of legislation tending to free the President from restrictions, particularly as to foreign policy in time of war abroad. But many veteran Republicans outside of Congress supported the bill and six Republican Senators voted for it.

Effects of the New Neutrality. The proclamation of September 5 with regard to the limitation of American rights to export to belligerents was put out of effect by the act of November 4. Instead, there went into effect a new prohibition keeping the merchantmen under the United States flag from sailing to and from the ports in the European area of war. The immediate effect of the removal of this shipping from the zone of warfare was to quiet the rise of irritation from German action against vessels under the American flag, action that had started and that threatened to continue. A German ship of war had captured the freighter *City of Flint*, carrying a cargo to England. Finding the *Flint* a bearer of contraband, the captors conveyed her to the Russian Arctic port of Murmansk. This happening, told in the dailies of October 24, came at a mo-

ment when it was bound to help sentiment for keeping American vessels out of the area of war; it thus helped the passage of the act and at the same time stimulated anti-German sentiment in the United States. The ship, still in the hands of a prize crew, tried later to travel down the Norwegian coast and reach German waters but was driven into Haugesund port for shelter from British ships and was restored to her American master by the Norwegian authorities, November 4.

The removal of the merchant flag of the United States from the chief routes of trade with northwestern Europe was soon followed by an extension of the British and French blockade of German commerce; German exports of goods had until then continued to go out in the ships of neutral neighbors, Holland and Belgium; but now Great Britain November 21, and France, November 22, asserting their right of reprisal against German breach of convention, in sinking vessels without warning and in strewing unmoored mines, prohibited the carrying of German merchandise in general in neutral ships. The Neutrality Act of 1939 made it possible for these two belligerents to proceed thus without running afoul of American vessels.

Proclamations of November 4. Closely connected with the new act and with the events that followed it were three proclamations issued, November 4, by the President. One of these revoked its direct predecessor of September 5, particularly as to exports of materials of war, and substituted

an announcement of neutrality under the terms of the new act; the second forbade to belligerents' submarine vessels the entry into the United States' ports or territorial waters (except those of the Panama Canal Zone) unless such vessels were compelled by force majeure and should enter with the superstructure emerged and flying the proper colors; the third decreed a combat area consisting of the waters within a line from the southern end of the French Biscay shore, westward to the neighborhood of the 20th meridian, thence north to the latitude of, approximately, the northern coast of Scotland, and thence easterly to include the Shetlands and terminate in Norway, at Bergen, and prohibited the entrance of ships under the American flag into this area; in the Mediterranean, the coasts under French sovereignty were forbidden. The effect of the proclamation of the combat area was to shut off from the merchantmen of the United States not only Great Britain, France, and Germany, but also Belgium, Holland, Denmark, southern Norway, and all the Baltic ports, Sweden's included. It remained possible in theory to send or bring under the American flag goods from or to any one of the belligerents or the inclosed neutrals, via some such port as Bergen, Genoa, or Barcelona, but this involved a transshipment. The British and French move to stop German exportation via such ports as Rotterdam and Antwerp, which followed, ran no risk of clashing with the merchantmen of the United States, once the combat area had been established.

Disturbance to Shipping. American vessels in the transatlantic trade had bad business almost from the outset of the war. Under the September proclamations they could make their intended voyages but could not count on the protection, generally speaking, of the U.S. naval forces; they were subject to belligerents' seizure in case they carried any of a long list of articles accounted to be contraband; and they might not carry materials of war which above all the belligerents wanted. There remained a high demand for such goods as cotton and cereals; the maritime employees' unions, however, maneuvered to win higher compensation on the strength of the increased peril of seafaring. The November proclamations changed the situation again, shutting off American craft from the greater part of the trade with Europe; the transportation of passengers had largely ceased of itself, after the initial homeward rush of Americans caught abroad by the war. The organization named the United States Lines tried, November 5, to escape the expected crisis in its business by asking the Government's permission to transfer eight of its vessels to registry in the Republic of Panama; but the Maritime Commission, at the reported direction of the President, refused the demand. The plan, as soon as known, drew public criticism from the political opposition as evasive of the new Neutrality Act and likely to involve the country in international difficulty. The transfer of 15 tankers to the Panamanian registry had been effected a month earlier, and the sale of some of the older fishing vessels of the Portland Trawling Company was later reported.

Neutrality Towards Russia. Russia, without going to war against England and France, participated with Germany in the seizure of Poland in September; Russia started, at the end of November, to invade Finland, a country that had gained popular favor in the United States by

making regular and punctual payments on its "war debt," to the latter Government, a debt totaling about \$8,000,000 in unpaid principal. The President issued, December 1, a statement condemning the Russian "resort to military force," but diplomatic relations with Russia were not interrupted. The Export-Import Bank—a Federal agency—in concert with the Reconstruction Finance Corporation, granted credit (December 10) to the Finnish government, for \$10,000,000 usable in buying "agricultural surpluses and other civilian supplies." Such goods did not directly meet the Finns' need of military material, but the credit was expected to sustain Finnish economic strength. Against Russia, the President issued, December 2, a statement that without mentioning Russia, included that country by implication in an informal embargo against the exportation of aeronautical material "to nations obviously guilty of . . . unprovoked bombing."

Inter-American Features of Neutrality. Canada was a belligerent; Mexico, a heavy exporter of petroleum to Germany up to the outbreak of war; and Latin-American countries were in some cases much dependent on commerce with European countries. The interest of the United States lay in preserving close economic relations with Canada, normally almost the leading purchaser of goods from the United States: in preventing a return of difficulties such as had attended relations with Mexico in the period of the earlier European war, and in supplying so far as possible the deficiencies that trade in other American republics suffered by the interruption to the normal economy of the European belligerents. In the case of Canada trade by land continued as usual; that by sea remained open to United States' vessels, under the new Neutrality Act, with Pacific ports and with the eastern port of St. John. Canada became a receiving point for airplanes manufactured in the United States. A regulation issued on their export prohibited their flying out and thus did away with their proceeding directly to any European belligerent destination; but in Canada's case they were easily conveyed over bordering water by scows or towed over the land boundary. In the case of Latin-American republics efforts to augment trade took the form of negotiations for new or more extensive commercial agreements and for the extension of credit with which such countries might increase their purchases of the United States' goods. The Brazilian government, allowed to put into use a feature of an agreement made with the United States in 1937, through Secretary Morgenthau and Minister of Finance De Souza Costa, bought gold from the United States, which received in return exchange on other countries; several purchases of about \$3,000,000 each were announced late in the year. Brazil was allowed to buy in October 14 U.S. merchant ships averaging 5000 tons. There started a preliminary move toward a commercial agreement with Uruguay, to do away with that country's thoroughgoing restraint upon increase of purchases from the United States. Nicaragua contracted, November 15, a loan of \$2,000,000 from the Export-Import Bank, for highways and "other public necessities."

Foreign ministers of American republics were brought together at Panama late in September. Their councils established a common "zone of safety" in all coastal waters but Canada's, and promoted agreement on policy toward belligerents' activities, on effort to exclude food and clothing

from lists of contraband, on a general scheme of conduct as to neutrality, and on a committee of experts to meet at Washington for the study of economic shock caused by the war. An Inter-American Financial and Economic Advisory Committee accordingly convened at Washington in November and discussed, among other things, a proposed "pan-American dollar" for use in foreign trade. Many of the moves connected with the effort to associate the United States and other republics of the Western Hemisphere in their neutrality led up to the matter of replacing the wreckage left in these republics' economic relations with the United States by the collapse of trade and credit in the early '30's; notably, report from Washington, October 30, spoke of a prospect that the Federal Government would enter and hasten the protracted dealings of the Foreign Bondholders' Protective Council over numerous American republics' insolvencies on debts to the investing public in the United States.

For Uruguay's neutrality in the case of the refugee German battleship *Admiral Graf Spee*, see URUGUAY. See CANADA and the various neutral countries under *History*; INTERNATIONAL LAW; PAN AMERICANISM.

NEVADA. Area and Population. Area, 110,690 square miles; included (1930) water, 869 square miles. Population: Apr. 1, 1930 (census), 91,058; July 1, 1937 (Federal estimate), 101,000; 1920 (census), 77,407. Reno had (1930) 18,529; Carson City, the capital, 1596.

Agriculture. Nevada harvested, in 1939, 369,600 acres of the principal crops. Hay was the predominant agricultural product. Tame hay, on 184,000 acres, made 338,000 tons (estimated farm value, \$2,028,000); wild hay, on 137,000 acres, 123,000 tons (\$689,000). On 20,000 acres, wheat gave 512,000 bu. (\$394,000); the yield of wheat to the acre, 25.6 bu., averaged higher in Nevada than in any other State of the Union in 1939.

Manufacturing. Establishments engaged in manufacturing in Nevada numbered 84 in 1937 (in 1935, 83); they employed 1012 wage-earners (in 1935, 1224), who received \$1,625,121 (in 1935, \$1,694,282); the yearly output of manufactured goods amounted to \$20,568,365 (for 1935, \$15,302,632). The Federal Census of Manufactures for 1937 did not give the full particulars by industries, save for one-seventh of the manufactured total, and in special, no data on metallurgical works were offered.

Mineral Production. Gold, silver, copper, lead, and zinc mined in Nevada rose in aggregate value to \$29,321,857 for 1929, from \$23,529,064 for 1938. Gold had exceeded copper as to value of output for 1938; but copper resumed the lead over gold in the figures for 1939. The production of gold mounted to 339,000 oz. for 1939, from 296,434 for 1938; by value it was \$11,865,000 and \$10,375,190 for the respective years. The production of copper augmented more sharply, to some 130,830,000 lb. for 1939, from 92,338,000 for 1938; by value, to \$13,606,320, from \$9,049,124 for 1938. The production of silver remained at much the same rate; it totaled 4,066,000 oz. for 1939 and 4,355,471 for 1938; by value, \$2,759,951 (1939) and \$2,815,658 (1938). Lead and zinc, together, were produced to the value of somewhat over \$1,000,000 in either year.

Education. Enrollments of pupils in Nevada's public schools in the academic year 1938-39 totaled 19,973; this comprised 14,520 in the elementary and kindergarten groups and 5453 in high schools.

Expenditures for public-school education totaled \$3,108,647. Salaries of the 900 public-school teachers for the year averaged \$1431 in elementary teaching and \$1863 in high schools.

Political and Other Events. The *City of San Francisco*, a streamlined train of the Southern Pacific system, running eastward through Nevada was wrecked on the night of October 3, 20 miles west of Carlin. The accident caused the death of 24 persons and the injury of about 60 others. The alleged gamblers W. J. Graham and J. G. McKay (see YEAR BOOK, 1938) were sent to Federal prison for terms of 9 years after conviction in New York on account of former activities in Reno. The discovery of emeralds, the first said to have been found occurring in the United States, was made at a mine near Rye Patch.

Officers. Nevada's chief officers, serving in 1939, were: Governor, E. P. Carville (Dem.); Lieutenant Governor, Maurice J. Sullivan; Secretary of State, Malcolm McEachin; Treasurer, Dan W. Franks; Comptroller, Henry C. Schmidt; Attorney-General, Gray Mashburn; Superintendent of Public Instruction, Mildred Bray.

NEVADA, UNIVERSITY OF. A coeducational State institution of higher education in Reno, Nev., founded in 1874. There was an enrollment of 1125 students for the autumn term of 1939, and 150 in the summer session. The faculty included 81 members. The productive funds amounted to \$364,738, and the income for the year to \$677,233.91. The library contained 61,537 bound volumes. President, L. W. Hartman, Ph.D. inducted, Dec. 15, 1939.

NEWARK. See NEW JERSEY.

NEW BRUNSWICK. An eastern maritime province of Canada. Area, 27,985 square miles; population (June 1, 1939, estimate) 451,000 compared with 408,219 (1931 census). During 1938 there were 11,418 births (25.7 per 1000); 4882 deaths (11.0 per 1000) and 3368 marriages (7.6 per 1000). Chief towns (with 1931 population figures in parentheses): Fredericton, the capital (8830); Saint John (47,514); Moncton (20,689); Campbellton (6505); Edmundston (6430). In 1937 there were 101,253 students enrolled in schools and colleges of all kinds, including 1918 students of university grade.

Production. The gross value of agricultural production for 1938 was estimated at \$27,473,000 (\$26,632,000 in 1937) of which field crops accounted for \$14,912,000 (\$14,149,000 in 1937). Other important items were: Dairy products, \$5,800,000; farm animals, \$3,385,000; poultry and eggs, \$1,297,000; fruits and vegetables, \$1,282,000; fur farming, \$650,000. Crop production (1939) in bushels was: Oats, 7,639,000; barley, 466,000; wheat, 163,000. Livestock (1939): 53,220 horses; 220,900 cattle (including 112,600 milch cows); 107,600 sheep; 87,200 swine. Fur pelts sold in 1937 totaled 57,988 valued at \$707,332. The output (1937) of the forests equaled 217,098 M cu. ft. valued at \$13,157,666. In 1938 the value of the fish catch was \$3,996,000.

Mineral production (1938) was valued at \$3,802,565 of which coal (342,238 tons) represented \$1,133,346; natural gas (577,492 M cu. ft.), \$284,698; gypsum (48,418 tons), \$159,203. In 1937, from the 805 manufacturing plants, employing 15,602 workers, the net value of products was \$28,770,727. At the port of Saint John, 2,622,880 tons of cargo (import and export) were handled in 1938.

Government. For the fiscal year ended Oct.

31, 1938, revenue totaled \$8,609,192; expenditures, \$7,840,393. Net public debt (1937) was \$66,433,682. Revenue for 1939 was estimated at \$9,080,145; expenditures at \$9,063,393. The government is vested in a lieutenant-governor, assisted by an executive council of 8 members who also are members of the legislative assembly of 48 members elected for a term of 5 years by the people. In the Dominion Parliament, New Brunswick is represented by 10 Senators and 10 members of the House of Commons. Lieutenant-Governor, Col. Murray MacLaren (appointed Feb. 5, 1935); Premier, A. A. Dysart. See CANADA.

NEW CALEDONIA. A colony in the Pacific belonging to France, consisting of the island of New Caledonia and the following dependencies: Isle of Pines, Wallis Archipelago, Futuna and Alofi, Loyalty Islands, and Huon Islands. Total area, 8548 square miles; total population (1938 estimate), 55,000; (1936 census), 53,245. Nouméa (capital), on the island of New Caledonia, had 17,055 inhabitants in 1936.

Production and Trade. Chief products (in metric tons) are chrome (24,000 in 1937); coffee (2000 exported in 1938-39 season); copra (3400 exported in 1938); nickel (6004 in 1938); and phosphates (2000 mined in 1936). In 1938 the estimated value of merchandise imports (in old U.S. gold dollars) was \$2,100,000 (1937, \$2,400,000); exports, \$2,100,000 (1937, \$2,400,000).

Communications. In 1937, 142 vessels (361,514 tons) cleared New Caledonian ports. There was (1938) a 20-mile long narrow-gauge railway from Nouméa to Paita, and from Nouméa to Voh there was a daily motor-road service.

Government. The local budget for 1937 was balanced at 30,000,000 francs (franc averaged \$0.0405 in 1937). The colony is administered by a governor assisted by a privy council, and an elective council-general of 15 members. Governor, L. Jore.

NEWFOUNDLAND, nü'fün(d)-län'd'. A large island at the entrance to the Gulf of St. Lawrence, forming, with Labrador (q.v.), a British dominion (temporarily administered by the Crown through a governor and commission). Capital, St. John's. Area of Newfoundland proper, 42,734 square miles; population, 289,000 (estimated, Jan. 1, 1938). Chief towns, with 1935 census population, were: St. John's, 54,886; Bonavista, 4022; Harbour Grace, 2215; Grand Falls, 4244; Corner Brook, 6374; Carbonear, 3367; Twillingate, 3203; Burin, 2277; Grand Bank, 2209.

Education and Religion. From 7 to 10 per cent of the adult population is illiterate. For school enrollment, see 1938 YEAR BOOK, page 528. Religious population (1935) was: Roman Catholics, 93,925; Church of England, 92,709; United Church, 76,134; Salvation Army, 18,054; Presbyterians, 1460; other denominations, 7306.

Production. Fishing, farming, lumbering, mining and manufacturing are the principal occupations. The production of dried salt codfish in 1938 was 129,475,808 lb.; catch of the seal fishery, 226,747 seals valued at \$490,664. There were about 188,000 acres under crops and 16,000,000 acres of forests. Livestock statistics for 1937-38 showed 25,000 cattle; 9000 swine; 15,000 goats; 90,000 sheep; 15,000 horses. In 1938 there were produced 1,680,000 short tons of iron ore valued at \$4,285,000; 202,000 short tons of lead-zinc-copper concentrates valued at \$3,786,000; and 245,000 short tons of newsprint valued at \$10,220,000.

Foreign Trade. For the fiscal year ended June

30, 1938, imports were valued at \$27,912,351 (\$23,924,886 in 1936-37) and exports at \$34,943,240 (\$28,058,073). Imports in 1938-39 aggregated \$24,461,000 of which the United Kingdom supplied \$5,878,000, the United States \$7,682,000 and Canada \$9,196,000. Exports were destined chiefly for the United Kingdom, the United States, and Canada, in order. Codfish, cod and seal oil, paper and wood pulp, canned lobster, iron pyrites, seal skins, and herring comprise the leading exports. See IMPORTS AND EXPORTS.

Finance. Actual receipts for the fiscal year ended June 30, 1939, were 11,221,242 Newfoundland dollars; expenditures, \$15,216,298; British grant-in-aid, \$3,995,056. Budget estimates (1939-40): Receipts, \$11,382,000; expenditures, \$17,117,000; British grant-in-aid, \$5,735,000. The Newfoundland dollar is approximately equivalent to one U.S. dollar.

Communications. Railways in 1938 had 838 miles of line (government line, 750 miles) and carried 183,216 passengers and 592,375 long tons of freight. Gross railway earnings (including steamer service and dockyards) was \$3,110,577 in the fiscal year ended June 30, 1939. There were 3692 miles of highway in 1939, of which 2000 miles were unimproved earth and non-surfaced (see ROADS AND STREETS). Cobb's Arm near Botwood and Hattie's Camp, about 30 miles east of Botwood, are important transatlantic air bases for seaplanes and landplanes, respectively. During 1937-38, a total of 1729 vessels of 1,945,039 net registered tons entered the ports of Newfoundland.

Government. Newfoundland temporarily relinquished its status as a dominion as a result of extreme financial difficulties in 1933. Government has since been administered by a Governor and a commission responsible to the British Secretary of State for Dominions. Governor in 1939, Vice Adm. Sir Humphrey Thomas Walwyn, who assumed office Jan. 21, 1936. Commissioners: J. H. Gorvin, assumed office, June, 1939 (Natural Resources), Sir Wilfred Wentworth Woods (Public Utilities), J. H. Penson (Finance), all Britishers; and J. A. Winter (Home Affairs), L. E. Emerson (Justice), and J. C. Puddester (Public Health), all Newfoundlanders.

History. Despite the substantial financial aid that Newfoundland continued to receive from the British Government in its struggle for economic rehabilitation, slow progress was made during the first part of 1939 and the outbreak of the European War in September proved a further economic setback to the island. The recession experienced in 1938 (see 1938 YEAR BOOK, p. 528) became worse in the early months of 1939 as a result of a late spring, severe weather that interrupted fishing operations, and low prices for exports. The government was obliged to continue its guarantee of export prices for fish (estimated to cost \$650,000 for the 1939 catch).

The government contributed an additional \$200,000 toward the establishment of a fresh-fish freezing industry on the south-west coast, and \$220,000 toward the purchase of nets, boats, and gear for fishermen supplying a new herring meal and oil factory on the west coast. A \$315,000 allotment was made toward a rehabilitation project in the Placentia Bay area, involving the construction of boats, depots and roads, and land improvements.

Returning from their visit to Canada and the United States, King George and Queen Elizabeth paid a short visit to Newfoundland on June 17. They landed at Holyrood, a tiny fishing village in

an arm of Conception Bay, and proceeded by automobile to St. John's, 30 miles away. The King broadcast a message to the island from the new radio station in the capital, laid a wreath on the near-by war memorial, and conferred knighthood upon J. C. Puddester, Commissioner of Public Health. The royal couple returned to their ship by way of the fishing village of Portugal Cove. They received an enthusiastic welcome in all of the places visited.

When war broke out on September 3, Newfoundland rallied to the support of the mother country with the same loyalty as in 1914. Some 2000 Newfoundlanders had enlisted for service in the British Army and Air Force by the end of November and hundreds of hardy fishermen volunteered for mine-sweeping and other patrol services in the North Sea. The Newfoundland Government also reduced the grant-in-aid received from the British Government to the sum, about £900,000, needed to cover government payments in sterling.

The war caused a marked rise in prices of basic articles of consumption, most of which are imported, thus increasing the poverty of many Newfoundlanders. This was partly offset by higher prices for fish, fish oils, and other export products. The government continued to subsidize exports and assumed control over foreign trade and exchange transactions to conserving purchasing power and to prevent the flight of capital. Higher taxation and higher tariffs duties on some imports also were announced. The Newfoundland Government in July consented to a comprehensive survey of the Labrador coastline by the Canadian Department of National Defense to determine suitable points for air bases and other defense projects.

NEW GUINEA, gin'i. The name of an island in the East Indies, and also of those territories in the Western Pacific (including part of the island of New Guinea) mandated to Australia by the League of Nations. Total area of the island of New Guinea, 308,000 square miles; population, about 1,000,000. See NETHERLANDS INDIES; NEW GUINEA, TERRITORY OF; PAPUA, TERRITORY OF.

NEW GUINEA, TERRITORY OF. The territory administered by Australia under mandate of the League of Nations, consisting of Northeast New Guinea (also called the Mainland), 69,700 square miles; Bismarck Archipelago (consisting of New Britain, New Ireland, Lavongai, Admiralty Islands), 19,200 square miles; Solomon Islands (consisting of Bougainville, Buka, and adjacent small islands), 4100 square miles. Total area, 93,000 square miles; population (June 30, 1938), 563,387 (6270 non-indigenous, and 557,117 enumerated native), exclusive of the unknown number of natives in areas of the territory not yet under government control. Rabaul (on New Britain), which had been the capital, was destroyed by volcanic eruptions (June 2, 1937). It was officially announced at Canberra (June 22, 1938) that Salamaua, a seaport on the mainland of N.E. New Guinea, would be the new capital; but a government committee appointed by the Australian Commonwealth recommended (October, 1939) the selection of Lae as the capital instead.

Production and Trade. The area under cultivation in 1937-38 totaled 245,184 acres, of which 239,869 acres were devoted to coconuts. Cacao (200 metric tons, 1937-38 season); copra (74,400 metric tons exported in 1938); kapok, coffee, tobacco, and fruits are produced. Gold

(236,113 fine oz. in 1938) and silver (3 metric tons, 1937) are the chief minerals, followed by copper, osmiridium, iron, sulphur, platinum, and brown coal. Imports, 1937-38, were valued at £A1,610,937 (£A1,311,623 in 1936-37); exports, £A2,980,360 (£A3,089,072). The Australian pound (£A) averaged \$3.9394 for 1937. Shipping entered and cleared during 1937-38 totaled 678,983 tons. Air service between Sydney, Australia, and New Guinea was put into operation on May 30, 1938.

Government. For 1937-38 (1936-37 figures in parentheses) revenue totaled £A506,397 (£A481,070); expenditure, £A508,612 (£A460,118); public debt £A31,514. The territory is under an administrator assisted by an executive council of 9 members, of whom 1 must not be an officer of the territory. The legislative council consists of the administrator, the 8 official members of the executive council and 7 non-official members, the latter nominated by the administrator and appointed by the governor-general of Australia. Administrator, Brig.-Gen. W. R. McNicoll (appointed Sept. 13, 1934). See AUSTRALIA under *History*; *EXPLORATION*.

NEW HAMPSHIRE. Area and Population. Area, 9341 square miles; included (1930) water, 310 square miles. Population: Census of Apr. 1, 1930, 465,293; Federal estimate for July 1, 1937, 510,000; census of 1920, 443,083. Manchester (1930) had 76,834 inhabitants; Concord, the capital, 25,228.

Agriculture. Land harvested in New Hampshire in 1939 totaled 427,300 acres, in principal crops. The most extensive crop, tame hay, taken from 388,000 acres, made 394,000 tons (approximate farm value, \$4,649,000); potatoes, 9300 acres, 1,395,000 bu. (\$1,465,000); apples for market totaled 890,000 bu. (\$801,000).

Manufacturing. Establishments engaged in manufacture in New Hampshire numbered in 1937, 794 (in 1935, 775); they employed 56,517 wage-earners, or about one-eighth of the population, for \$55,234,545 in wages (in 1935, 53,833 received \$47,812,060); the year's output of manufactured goods totaled \$249,631,724 (in 1935, \$207,090,501), to which sum the processes of manufacture contributed \$105,308,526 (in 1935, \$90,733,834). Boots and shoes exceeded one-fourth of all the manufactured output of 1937; textiles, chiefly woven woollens and cottons, formed about one-fifth. The boot-and-shoe industry employed 17,713 wage-earners, paid them \$16,101,729, and produced \$64,025,165 in goods. Cotton woven goods manufactured in 1937 amounted to \$25,087,085 (narrow fabrics included); the output of woolen weaves attained \$23,503,934; paper, to the value of \$16,368,013, was produced.

About half of the manufactures of 1937 came from the two counties of the Merrimack valley—Hillsborough and Merrimack counties. Hillsborough County, including the cities of Manchester and Nashua, produced manufactures totaling \$105,301,433.

Education. New Hampshire's inhabitants of school age (from 5 years to 16) were reckoned for the academic year 1937-38 at 89,630. For the year 1938-39 enrollments of pupils in all public schools numbered 75,850; this comprised 53,981 in elementary study, 20,795 in high schools, and 1074 in evening schools. The year's expenditure for public-school education amounted to \$8,547,642; this included the 2940 teachers' salaries, averaging, for men and for women respectively, \$1830.12 and

\$1353.40 in secondary schools and \$1443.56 and \$1089.97 in elementary teaching.

Legislation. The regular biennial session of the Legislature, which opened in January, worked an important change in the State's fiscal system. Creating a tax on sales of tobacco at the rate of 15 per cent of the price, it decreed that the revenue from the new impost should be applied to reducing or extinguishing the State's ad-valorem tax on property. By an unexplained slip the officers of the two legislative houses and, after them, Governor Murphy signed an early draft of the measure, lacking the provision as to the property-tax, but the error was promptly discovered and corrected. The Legislature also took necessary action on a State budget of about \$10,500,000 to cover the expenditure of the next two fiscal years. A bill to change the time and name of Fast Day, observed in New Hampshire for 258 years, failed of passage.

Political and Other Events. An element in the Federal Government's proposed system of works for restraining floods in the valley of the Connecticut River, the Surry Mountain Dam at Surry, N. H., was expected to be soon under construction; contracts for the work were sought by the Government from bidders in July.

A road, described as the first to link New Hampshire directly with Canada, was opened, September 24, with a ceremony attended by Governor Murphy and representatives of Canada. This road ran between Chartierville, near the border in southern Quebec, and Pittsburg, in the northern tip of New Hampshire. While travel up the headwaters of the Connecticut River and into Canada by automobile was common, the part of it that went through New Hampshire had taken a route reaching Canada only indirectly.

A study made for the State's Commission for the Promotion of the Wealth and Income of the People of New Hampshire brought forth, December 3, a report tending to show that the State's people suffered a net economic loss in 1936 of \$3,989,000, taking into consideration their share of Federal debt and tax-payments.

Officers. New Hampshire's chief officers, serving in 1939, were: Governor, Francis P. Murphy (Rep.); Secretary of State, Enoch D. Fuller; Treasurer, F. Gordon Kimball; Attorney-General, Thomas P. Cheney; Comptroller, Charles T. Patten; Commissioner of Education, James N. Pringle.

NEW HAMPSHIRE, UNIVERSITY OF. A co-educational State institution of higher learning at Durham, N. H., founded in 1866 in Hanover, N. H., and transferred to Durham in 1893. The 1939-40 enrollment was 2031, of whom 1385 were men and 646 women. The summer session had a registration of 518. The faculty and research and extension staff totaled 289. The endowment amounted to \$1,245,625, and the income for the year was \$1,722,836. The new Biological Institute of plant and animal sciences housed in the new class and laboratory building, Nesmith Hall, was first occupied this year. The library contained 103,000 volumes. President, Fred Engelhardt, A.M., Ph.D.

NEW HEBRIDES, hēb'ri-dēz. A British-French condominium comprising a group of islands in the South Pacific. Espiritu Santo, Malekula, Efate, Ambrym, Erromanga, Epi, Aoba, Pentecost, Maeovo, Gaua, and Vanua Lava are the main islands. Total area, 5700 square miles; population (1938 estimate), 43,205, in-

cluding 2205 non-natives. Vila, the capital, had about 1200 inhabitants; Malekula had 9000 natives.

The principal products are copra (11,800 metric tons, 1937); cacao (700 metric tons exported, 1937-38 season); coffee (2000 metric tons exported, 1938-39 season); and vanilla. In 1938, imports were valued at £111,867; exports, £120,211; condominium revenue, £27,614; condominium expenditure, £23,917 (£ averaged \$4.8894 for 1938). Executive power is vested in a British Resident Commissioner (who is under the British High Commissioner stationed at Suva, Fiji Islands) and a French Resident Commissioner (subordinate to the French High Commissioner stationed at Nouméa, New Caledonia).

NEW JERSEY. Area and Population. Area (1930, but revised to exclude 64 square miles of water yielded to Delaware in a revision of boundary), 8160 square miles; included water, 646 square miles. Population: Apr. 1, 1930 (census), 4,041,334; July 1, 1937 (Federal estimate), 4,343,000; 1920 (census), 3,155,900. Newark (1930) had 442,337 inhabitants; Jersey City, 316,715; Paterson, 138,513; Trenton, the capital, 123,356.

Agriculture. New Jersey harvested, in 1939, 724,000 acres of principal crops, mainly in hay and corn. Tame hay, gathered on 219,000 acres, made 299,000 tons (estimated farm value, \$5,232,000); corn, on 189,000 acres, 7,182,000 bu. (\$4,740,000); apples gathered for market attained 2,950,000 bu. (\$2,065,000); peaches, 1,435,000 bu. (\$1,435,000); potatoes, on 55,000 acres, 7,480,000 bu. (\$5,834,000); sweet potatoes, 15,000 acres, 2,325,000 bu. (\$1,976,000).

Manufacturing. The chief totals for New Jersey's manufacturing industry in 1937 (and for 1935 in parenthesis) were: establishments engaged in manufacture, 7064 (7425); their wage-earners, 436,745 (373,522); wages paid, \$523,504,132 (\$391,923,700); cost of materials, etc., \$1,890,538,525 (\$1,382,468,869); products' total value, \$3,253,246,218 (\$2,407,323,488); value contributed thereto by manufacture, \$1,362,707,693 (\$1,024,854,619).

The highly varied character of manufacture in New Jersey appears from the list of more than 200 industries separately classified in the report made on the State by the U.S. Census of Manufactures for 1937. The main industries or groups of industries in this list, on the basis of the value of products, were: the smelting and refining of copper, \$230,793,620; the refining of petroleum, \$216,284,099; the making of miscellaneous chemicals, \$177,138,819; and the production of electrical machinery and related goods, \$166,613,999. On the basis of wages paid, however, the leaders were: electrical machinery, etc., \$35,059,134; miscellaneous chemicals, \$23,788,827; shipbuilding, \$16,119,868; petroleum-refining, \$15,405,420; machinery, exclusive of lines separately listed, \$14,186,814; steel-works and rolling mills, \$12,552,532; production of rubber goods, \$12,299,783. Divers industries making garments produced about \$143,000,000 in aggregate value of goods.

Cities that reported more than \$100,000,000 each of goods manufactured in 1937 were: Newark, \$421,649,502; Jersey City, \$270,840,745; Perth Amboy, \$210,884,579; Bayonne, \$152,211,277; Camden, \$150,455,138; and Kearny, \$114,720,115. Passaic's total was \$97,398,228; Paterson's, \$94,055,391.

Mineral Production. The total yearly value of the native mineral products of New Jersey, as

published by the Bureau of Mines in 1939, to cover the year 1937, was \$31,467,931. From this total and from one of its items, clay products, was omitted a great component theretofore supplied by pottery and refractories. That component came to some \$13,500,000 for the year 1936. Those comparing current with earlier totals of the State's mineral production should take account of the change in the basis of reckoning.

The State's total for 1937 included the output of zinc, which made up more than two-fifths of the amount; of clay products (exclusive of pottery), making up one-fifth; and of cement, for which total yearly production was not stated for New Jersey individually. The mining of zinc decreased to 85,389 short tons of the recoverable metal, for 1938, from 100,408 tons (value, \$13,461,309) for 1937. Clay products, exclusive of pottery, attained, for 1937, \$6,395,790. The mining of iron ore decreased sharply in 1938, to a year's total of 139,890 gross tons; ore mined in 1937 had totaled 544,635 tons; in yearly value, the production of iron ore was \$760,929 for 1938 and \$2,474,087 for 1937.

Education. Enrollments of pupils in the public schools of New Jersey in the academic year 1938-39 numbered 749,405. This comprised 34,806 in kindergartens, 472,620 in elementary study, 50,468 in junior high schools, 35,627 in senior high schools, 45,546 in four-year high schools, 1243 in postgraduate courses, and 9095 in special classes. Enrollments in the aggregate fell somewhat below those for the year before, but by groups, enrollments exceeded those of the year before, except in the kindergarten and elementary groups. The year's expenditures for public-school education attained \$102,275,493, inclusive of \$16,630,930 for service of debt, but exclusive of \$9,713,004 for outlays. Over half of the current expenditure went to pay the 28,595 teachers, who averaged \$2057.55.

Legislation. The Legislature met on January 10 in regular annual session, under Republican control in both houses. Its foremost problem was to find the means of meeting a great part of the cost of poor-aid rendered by State and localities to a substantial part of the population. Governor Moore (Dem.) warned the session at its outset that the State still had to assist in more than 70,000 relief cases, urged the prolongation of the joint support for "work relief" in which New Jersey and the Federal Government had already embarked, and left it to the Legislators how to determine and meet the cost of what must be done. The Legislature enacted measures requiring municipalities to meet one-fourth of the cost of public aid in 1938; for the future it proposed the borrowing of \$21,000,000 in the next two years, retrievable from certain expected highway-fund surpluses and from the proceeds of anticipated taxes on pari-mutuel betting; in addition the temporary diversion of some other funds was to bring the available total to \$33,000,000; of this sum, \$15,000,000 or three-fourths of the expected charge on State and subdivisions together, was to be available in the new fiscal year. Efforts on the part of a strong group of the Republican majority were exerted for the creation of taxes on incomes or on retail sales as preferable to the incurring of debt. The efforts were defeated, largely by urban sentiment, cities apprehending that taxes would chiefly fall on them. The popular vote, November 8, ratified the Legislature's proposal to issue the \$21,000,000 of State bonds.

Other acts provided appropriations of \$39,281,-

490 for highways, inclusive of \$4,000,000 that might be used in connection with poor aid. The Governor's budget for the next fiscal year, totaling nearly \$40,000,000 with the inclusion of appropriation against a \$2,000,000 deficit of the year ending, was voted, less some minor cuts.

Political and Other Events. The State's efforts to increase its revenue and thus overcome deficits occasioned by the cost of poor-relief took several forms; the difficulty of the problem lay in the widespread aversion to creating either a sales tax or an income tax. Apart from the dislike of being taxed, shared by the populations of other States where either or both of these imposts had nevertheless become established, New Jersey had reasons of its own for avoiding them. Its policy of attracting industries by favorable treatment had kept it fairly immune to the emigration of industries, which had afflicted other States of the Northeast. The wages paid by its manufacturers in 1937 came to 92 per cent of the like total for 1927, a much better showing than in the corresponding figures for Massachusetts, New York, or Pennsylvania. New Jersey was bent, moreover, on attracting industrial immigration from other States, and letters from Governor Moore, according to the *San Francisco Chronicle*, were soliciting the incoming of industrial firms from as far as California.

The State's plan to allow horse races and to tax them thus formed an important part of the policy of authorities in an area having some claim to the advantages of a fiscal oasis and yet pressed for the means to give decent aid to its poor. Having been duly proposed by successive Legislatures a proposition to amend the State constitution, by repealing its prohibition of race-track gambling, was submitted to popular vote at a special election held on June 20. The change was opposed by a Republican group led by Lester H. Clee, former candidate for Governor, and by some religious groups. It had the support of Mayor Hague of Jersey City, the home of the chief block of the State's Democratic vote. Friends of the amendment hoped that the establishment of horse-racing, with betting, would bring the State, through taxes as much as \$5,000,000 a year, but the State Chamber of Commerce expressed doubt that the yearly receipts thereby would attain \$1,000,000. The amendment was adopted by the voters; 457,255 ballots were cast for it, 301,128 against. Racing did not start in 1939, for the Legislature failed to agree on a bill for the regulation of races and wagers and for their taxation.

In further effort to obviate the need of more taxes, Attorney-General Wilentz moved to effect the collection of taxes that the State claimed from the railroads; these had been in dispute since 1932, when the chief railroads having line in the State started protesting yearly the assessment of their properties as excessive. The sum in dispute rose gradually, to more than \$34,000,000 in 1939. The Legislature having made no headway with a move to settle the State's claims for \$14,263,000, Wilentz moved in October to enter judgments against some of the delinquent companies. Some of these were already bankrupt and able to call upon the Federal courts to shelter them from debt judgments; another, the Central Railroad of New Jersey, took refuge by petitioning, October 30, for a reorganization, in the Federal District Court at Newark. A Federal District Court order, December 26, required this road, then in reorganization, to pay 60 per cent, or a little over \$2,000,000,

of its tax of 1939. Another District Court order, November 2, enjoined the State from collecting more than 60 per cent, from any of the suing railroads, or the levies against them for 1934, 1935, and 1936.

Courts' Decisions. The U.S. Supreme Court refused to review the conviction of the two Ellis H. Parkers (Sr. and Jr.) in 1937 for the abduction of Paul H. Wendel, who had been taken and made to sign a purported confession of the kidnapping of the Lindbergh baby; the Parkers were thereupon sent to serve their time in the North-eastern Federal Penitentiary.

The case of the C.I.O. against Mayor Hague of Jersey City, over the city's forbidding the organization's agents to hold public meetings and to distribute circulars in the streets (see NEW JERSEY, in 1938 YEAR BOOK, pp. 531-32) was appealed by Hague; the Third U.S. Circuit Court affirmed the original decision; Hague took his appeal to the U.S. Supreme Court. Its decision (June 5) upheld the courts below. One effect of the decision was to overthrow the method that Jersey City had employed for years, to prevent by the use of the local police power the spread of possibly subversive movements.

The State's Court of Errors and Appeals held void (October 26) four temporary injunctions that Vice-Chancellor Berry had issued against strikers' picketing and other proceedings. The State Supreme Court held against the extreme application of the municipalities' power to license businesses, by declaring void the ordinances of Camden and Atlantic City, respectively imposing \$10,000 and \$5,000 as fees to be charged for licenses required of "self-service" markets of a new type that had lately begun to spread through the State. A much controverted State act of 1938, prohibiting the sale of merchandise at retail, for a price below its cost, was declared unconstitutional by the State Supreme Court's decision of September 16. The same Court held (February 1) that an act of 1925, to exempt from the State's taxes on inheritance the bequests to State educational institutions, was unconstitutional.

The Court of Errors and Appeals, in a suit brought by Camden, held, November 29, that an act of 1938, to apportion cities' shares of taxes paid by public utilities, was unconstitutional; the act had been designed to stop the local abuses of the power to tax such companies.

Jersey City and Hudson County. The Standard Oil Company of N. J. announced intention to put an end to some of its manufacturing operations at Bayonne, Union County, during 1940; this decision followed the company's receipt of an assessment at more than \$39,000,000 for pro-rata taxation, and the company's request for reassessment at less than one-third of the figure.

Municipal Affairs of Newark. Mayor Ellenstein and a group of other officials of the city of Newark were tried jointly in the Court of Common Pleas for conspiracy to defraud the city in purchases of land to be supplied to the Federal Government for the site of an aeronautical base for the Army; the land in question was in the Jersey Meadows, which form a wide marshy area, extending east of the city; filled and drained spots in the area had become the sites of manufacturing establishments, but much of the meadow land had no immediate utility and was held at a low market value. The case against the accused involved the alleged purchase on behalf of the city, of one tract (among others) at the price of

\$190,000, which had previously been purchasable for \$16,000. After proceeding for two months the case went to the jury; one of its members reported himself ill on the first night of the jury's confinement; he was deemed to be suffering from appendicitis and unable to proceed; a mistrial was declared, April 23. Charges were later made that outsiders had sought to tamper with the jury. Arrangements were made in September for the retrial of the case.

Newark, seeking to make a needed improvement in its revenues, assessed a number of great corporations having establishments there for taxes on huge sums representing the value of "intangible" personal property owned by the several corporations. The U.S. Supreme Court upheld (May 30) Newark's taxes on intangible property of the Newark Fire and two other insurance companies doing business in New York City; the Essex County Board of Taxation dismissed (February 2) assessments of \$36,000,000 against the American Can Company and \$17,000,000 against the Tidewater Oil Company; and the State Supreme Court held void (July 11) assessments against the Porto-Rican-American Tobacco Company (\$26,000,000), Duke Power Company, and Sun Oil Company. A number of airplane lines, regular users of the Newark airport, applied to the Civil Aeronautics Authority to transfer their operations to the new North Beach Airport in Queens Borough, New York City. The Newark Citizens Union presented September 21; a petition bearing 25,170 signatures and calling for a referendum on the proposal of changing the form of the municipal government to the city-manager type, from the existing government by city commission.

Other Localities. Camden, which had issued scrip from time to time between 1933 and 1936 and had recovered scrip to a total of \$8,000,000, ordered the burning of the scrip in January. At Hightstown, the garment-making machinery of New Jersey Homesteads, one of the earlier efforts of the Federal Administration to effect the resettlement of people in poor circumstances, was put up at auction; the decision to sell the industrial equipment of the colony followed unavailing efforts on the part of a co-operative association of colonists, garment-makers from near-by cities, to market their output of clothing.

Officers. New Jersey's chief officers, serving in 1939, were: Governor, A. Harry Moore (Dem.); Secretary of State, Thomas A. Mathis; Treasurer, William H. Albright; Comptroller, Frank J. Murray; Attorney-General, David T. Wilentz; Commissioner of Education, Charles H. Elliott.

NEW MEXICO. Area and Population. Area, 122,634 square miles; including (1930) water, 131 square miles. Population: Apr. 1, 1930 (census), 423,317; July 1, 1937 (Federal estimate), 422,000; 1920 (census), 360,350. Santa Fe, the capital, had 11,176 inhabitants in 1930.

Agriculture. New Mexico harvested, in 1939, 1,372,300 acres of principal crops. Cotton, on 93,000 acres, gave 97,000 bales (\$4,365,000, estimated farm value); tame hay, on 136,000 acres, 266,000 tons (\$2,500,000); grain sorghums, 253,000 acres, 2,150,000 bu. (\$2,362,000); wheat, 294,000 acres, 2,960,000 bu. (\$1,954,000); corn, 189,000 acres, 2,552,000 bu. (\$1,837,000); dry beans, 146,000 acres, 409,000 100-lb. bags (\$1,398,000).

Manufacturing. Comparatively little of the support of New Mexico's inhabitants came from

the manufacturing industries; these paid wages during 1937 in the ratio only of \$7 a year to the inhabitant; the amount that the process of manufacture contributed to the value of products slightly exceeded the ratio of \$21 to the inhabitant. Manufacturing establishments numbering 241 in 1937 (in 1935, 197) employed 3683 wage-earners (in 1935, 2827), who received \$2,991,782 (in 1935, \$2,232,568); they produced \$20,598,868 in value of output (in 1935, \$13,573,108), to which their manufacturing processes, apart from cost of material, etc., contributed \$9,113,851 (in 1935, \$5,761,062). The output of lumber and timber products attained \$4,945,151.

Mineral Production. The total value of native minerals produced in New Mexico in 1937 was \$72,855,745; petroleum supplied about one-half of this, natural gas one-tenth, copper about the same, and coal and zinc smaller but substantial portions. The yield of petroleum decreased to 35,759,000 barrels for 1938, from 38,854,000 barrels (value, \$36,600,000), for 1937. Natural gas to the quantity of 46,337 million cu. ft. produced in 1937 had a value of \$714,000 at its points of origin, or 1½ cents per M cu. ft., but this gas was delivered to consumers, and it was valued at \$7,699,000 at points of delivery. Reports on operations in 1938 listed smelters, steam boilers and sugar refineries in the chief centres as using a considerable part of the delivered gas. Extractors of gasoline treated natural gas to the quantity of 91,800 million cu. ft. in 1938. A moderate decline in its consumption by customers occurred in that year. The mines' output of coal, likewise decreased, to about 1,252,000 net tons (1938), from 1,714,955, in value \$4,973,000 (1937).

Soon after the outbreak of war in Europe (chief source of American imports of potash), the International Agricultural Corporation announced intention to expand its mine of potassium salts near Carlsbad, N. M., at an expense around \$2,500,000 and increase its potential production of potassium sulphate from the mine, by the summer of 1940 to the yearly rate of 70,000 tons and that of muriate of potassium to a quantity about equal to the sulphate. The mines of potash in this area had begun shipments in 1931; their production had developed greatly and had attained about 900,000 tons for 1938, averaging about one-fourth of potash (oxide of potassium). New Mexico, the chief producer of potash in the Union, furnished the greater part of the domestic output (value, \$9,175,599) of 1938.

For 1939 the value of mines' aggregate output of gold, silver, copper, lead, and zinc in New Mexico attained about \$15,719,238. This sum not only far exceeded the corresponding one for 1938, of \$9,473,819, but amply surpassed the figure for 1937, of \$14,038,790. Copper afforded the greater part of the value of the five metals; the mines' yearly yield of recoverable copper rose in quantity to 91,826,000 pounds (1939) from 40,878,000 (1938); by value, to \$9,549,904, from \$4,006,044. The yield of zinc increased to 63,436,000 pounds (1939), from 56,472,000 (1938); in value, to \$3,362,108, from \$2,710,656. The value of the production of gold fell to \$1,294,685 (1939), from \$1,506,750 (1938). The subordinate outputs of silver and of lead, respectively \$966,241 and \$646,300 in value for 1939, each somewhat exceeded the corresponding figure for 1938. The Pecos mine, in San Miguel County, closed, May 31, 1939, having exhausted its ore, after 12 years' operation and long leadership as a producer of

gold, silver, lead, and zinc. At Hurley the Nevada Consolidated Copper Company opened (May 2) a smelter to treat material from the neighboring concentrator of the Chino Copper enterprise.

Education. For the academic year 1937-38, the latest covered by the statistics that follow, enrollments of pupils in the public schools of New Mexico numbered 129,877 (in municipal schools, 65,228 and in rural schools, 64,649); the total of enrollments comprised 109,307 in elementary study and 20,570 in high schools. The year's expenditure for public-school education amounted to \$8,532,029. Teachers in public schools numbered 3709; those in the municipal positions, 1738 in all, were paid for the year at the average of \$1244; those in the rural schools, 1971, averaged \$842.

Legislation. The regular biennial session of the Legislature convened in January. It gave the State's ratification to the compact of New Mexico, Colorado, and Texas, apportioning among them the use of water from the Rio Grande River and terminating a longstanding suit maintained against New Mexico by Texas. In the field of taxation, an impost of 2 per cent of value was laid on goods bought outside and brought into the State. Firms in the business of making small personal loans were required to hold State licenses. A liquor bill was passed, containing a section to permit the sale of intoxicant drink on Sunday; Governor Miles vetoed this provision of the measure.

Political and Other Events. John E. Miles took office as Governor, January 2, succeeding Clyde E. Tingley. Old-age assistance was paid in New Mexico, in July, to 3908 persons, who received \$46,297 for that month, an average of \$11.85 for each recipient. A series of Federal prosecutions of persons accused of conspiring to take advantage of the WPA ran through the first half of the year. Alleged amity of some of the defendants with U.S. Senator Chavez gave the prosecutions a political aspect. About 80 indictments were originally issued; ten persons had been convicted by the end of March, but several obtained retrials and some of these were then acquitted.

The 50,000 agricultural Navajo Indians of New Mexico and Arizona voted, November 21, through their tribal elders, to accept Federal assistance offered them on account of drought which had spoiled their crops of 1939.

Officers. The chief officers of New Mexico, serving in 1939, were: Governor, John E. Miles (Dem.); Lieutenant-Governor, James Murray, Sr.; Secretary of State, Jessie M. Gonzales; Auditor, E. D. Trujillo; Treasurer, Rex French; Attorney-General, Filo Sedillo; Superintendent of Public Instruction, Mrs. Grace J. Corrigan.

NEW SOUTH WALES. An Australian State. Area, 309,432 square miles; population, exclusive of full-blooded aboriginals (Mar. 31, 1939, estimate), 2,742,859 compared with 2,600,847 (1933 census). During 1938 there were 47,319 births, 26,105 deaths, and 24,579 marriages. Sydney (the capital), including suburbs, had 1,288,720 inhabitants on Dec. 31, 1938. Other important cities (with 1933 census populations) are Newcastle and suburbs, 104,485; Broken Hill, 26,926; Goulburn, 14,849; Cessnock, 14,385; Lithgow, 13,444. The 3409 State schools had 370,222 pupils enrolled in the last quarter of 1937; the 750 private schools, 99,465; the University of Sydney, 3378 students; the Technical College, with branch schools, 26,188.

Production. Wheat, barley, oats, maize, rice, sugar cane, tobacco, bananas, oranges, grapes, and apples are the principal agricultural products. During 1938-39, 59,124,000 bu. of wheat were produced from a total of 4,568,000 acres. The principal dairy products for 1937-38 were butter, 120,882,732 lb.; cheese, 8,004,873 lb.; bacon and ham, 21,374,691 lb. Wool (greasy) production for 1939 was 437,700,000 lb. Livestock (1937): 51,563,181 sheep; 3,019,581 cattle; 528,625 horses; 356,765 swine.

Minerals produced during 1938 were valued at £10,703,864 of which coal accounted for £A5,603,842; silver and lead, £A3,520,465; gold £A789,958; tin £A286,768; copper £A87,905. (The famous Broken Hill Proprietary silver mine, which in 54 years produced 12,300,000 tons of ore, was closed on Mar. 4, 1939, owing to exhaustion of the metal.) The 9097 manufacturing establishments, with 224,861 employees, had a value of production for 1938 amounting to £A85,168,133 net (£ Australian averaged \$3.8955 in 1938).

Government. For the fiscal year ended June 30, 1939, revenue totaled £A58,848,000; expenditure, £A69,596,000; public debt, £A359,844,000. The executive power of the State rests in the hands of a governor (appointed by the King), aided by an executive council. Parliament consists of the legislative council of 60 members (elected jointly by both houses of parliament), and the legislative assembly of 90 members elected by universal adult suffrage. (At the State general election of Mar. 26, 1938, the standing of the political parties in the legislative assembly was: United Australia, 37; Country, 22; Labor, 28; Independent Labor, 1; Independent, 1.) Governor, Lord Wakehurst (assumed office April, 1937); Premier, Alexander Mair (succeeded B. S. B. Stevens, August, 1939). See AUSTRALIA under History.

NEWSPAPERS AND MAGAZINES. In 1939, there were 14,311 newspapers in the United States, an increase of 98 over 1938. Of these 2170 were dailies (a decrease of 46 from 1938); 1662 were evening, 477, morning, and 31 "all-day" papers; 577 had Sunday editions, 78 were in tabloid form, and 174 were published in foreign languages. There were 50 published thrice a week, 391 twice a week, 11,662 weekly (an increase of 146 over 1938), and 38 at less frequent intervals.

Magazines and other periodical publications not classed as newspapers, numbered 7124 (an increase of 278 over 1938), of these 1482 were published weekly and 3946 monthly. The grand total of all periodical publications, including magazines and newspapers, was 21,435, an increase of 376 over 1938.

Estimated circulation of English language newspapers, was 39,434,382, of which morning papers had 14,337,496, and evening papers 23,451,589. Twenty-three radio stations were owned or operated by newspapers in the United States.

During the year 51 dailies suspended publication through mergers or otherwise, 16 becoming weeklies, and six semi-weeklies. Suspensions since June, 1937, numbered 98, the largest for a comparable period in recent newspaper history.

Among the more notable newspaper casualties were the *Chattanooga News*, *Atlanta Georgian & American*, *Milwaukee News*, *Oklahoma City News*, *Toledo News-Bee*, *Buffalo Times*, *Spokane Press*, *Syracuse Journal*, *Minneapolis Journal* (merged with *The Star*), *Portland, Oregon, News Telegram*, *Chicago Herald and Examiner* (leaving Chicago with but one morning paper,

The Tribune), *Newark Star-Eagle*, *San Diego Sun* (leaving only 18 papers in the Scripps-Howard Chain). The *New Milwaukee Leader* became *The Post* in January. James M. Cox bought the *Atlanta Journal* in December. The Wilkes-Barre, Pa., papers were suspended six months during a six-month guild strike—October to April. Mrs. Eleanor Medill Patterson bought the *Washington Times* and *Herald* from W. R. Hearst and consolidated them. George Backer bought the *New York Post* in June from J. David Stern and cartoonist Rollin Kirby and columnist Heywood Broun left the *New York World-Telegram* and joined *The Post*.

During the year various newspapers in Minneapolis, San Francisco, Chicago, Philadelphia, Kansas City, Los Angeles, signed up with the American Newspaper Guild, bringing such contracts up to the total of 118.

In April John S. McCarrrens (Cleveland *Plain Dealer*) became President of the American Newspaper Publishers Association and Don J. Sterling (Portland, Oregon, *Journal*) President of the American Society of Newspaper Editors.

In June the Associated Press inaugurated color photo wire transmission service, and acquired the world's largest camera, costing \$1600.

A radio debate between Secretary of the Treasury Ickes and Newspaper owner Frank Gannett on the freedom of the press provoked wide comment.

In August national advertising was up 14.7 per cent over 1933 in the newspapers; 34.3 in the magazines; 127.6 in radio. Circulation of 231 leading newspapers was 3.24 per cent higher than in 1938, news space was up .85 per cent; advertising lineage 3.1 per cent.

Notable deaths in the newspaper world were those of Louis J. Heath, Geo. R. Holmes, Geo. Buchanan Fife, Barron Collier (q.v.), Ralph Pulitzer (q.v.), Floyd Gibbons, and Heywood Broun (q.v.). Heywood Broun was succeeded as President of the American Newspaper Guild by Kenneth L. Crawford of the *New York Post*.

In the magazine field, circulation of 119 general magazines was up 4 per cent at the beginning of the year over the year before, and advertising lineage was down 19 per cent. There were more motion picture, mystery, radio romance, and comic magazines—one count showing a net increase from 43 to 53 in a year.

A new Washington weekly on the lines of the *New Yorker* was launched. The magazine *Ken* suspended. E. P. Grieron bought *The American Boy*. Scribner's suspended and was merged with *The Commentator*. David Lawrence's *United States News* came out in magazine form at the end of the year.

See PULITZER PRIZES.

B. P. ADAMS.

NEW YORK. Area and Population. Area, 49,204 square miles, exclusive of State water in the Great Lakes, but including (1930) other water, 1550 square miles. Population: Apr. 1, 1930 (census), 12,588,066; July 1, 1937 (Federal estimate), 12,959,000; 1920 (census), 10,385,227. New York City had (1930), 6,930,446 inhabitants; Buffalo, 573,076; Rochester, 328,132; Syracuse, 209,326; Albany, the capital, 127,412.

Agriculture. New York harvested, in 1939, 6,592,500 acres of principal crops. Tame hay, using three-fifths of this acreage, covered 3,962,000 acres and gave 4,179,000 tons (estimated farm

value, \$49,312,000); potatoes, on 211,000 acres, bore 26,797,000 bu. (\$22,777,000); corn, on 699,000 acres, 24,465,000 bu. (\$16,881,000); oats, 782,000 acres, 25,806,000 bu. (\$10,580,000); apples for market totaled 14,500,000 bu. (\$8,700,000); wheat, on 273,000 acres, 6,382,000 bu. (\$5,169,000); dry beans, 140,000 acres, 1,134,000 100-lb. bags (\$3,920,000); barley, on 146,000 acres, 3,942,000 bu. (\$2,129,000); buckwheat, 134,000 acres, 2,077,000 bu. (\$1,350,000); peaches, 1,722,000 bu. (\$1,378,000); pears, 1,749,000 bu. (\$1,312,000); grapes, 75,600 tons (\$2,646,000).

Manufacturing. The U.S. Census of Manufacturers' report published in 1939 indicated that New York State, while its manufacturing industries' performance in 1937 showed substantial gain over that of 1935, nevertheless lost ground to Pennsylvania and Illinois, both of which States outstripped it as to absolute gains in employed wage-earners, wages paid, value of products, and value contributed thereto by manufacture. New York's manufacturing establishments numbered 29,747 in 1937 (in 1935, 33,569) and employed 995,658 wage-earners (in 1935, 878,592), who received \$1,236,048,186 (in 1935, \$991,677,618); the manufactured products totaled \$7,314,446,524 (in 1935, \$5,963,850,154); to which sum the processes of manufacture contributed \$3,136,180,454 (in 1935, \$2,656,335,394).

The fabrication of garments of many sorts, inclusive of hats, footwear, and furs, and taken as a whole, accounted for about \$1,350,000,000 of the output of manufactures in 1937; this group of products outranked in value all classifications in the Census of Manufactures; but it there appeared among a considerable number of classifications: among them, boots and shoes (those of rubber excepted), \$125,819,448 in output; men's, youths' and boys' clothing, \$254,824,584; dresses, \$338,428,786; fur goods, \$133,506,159. Outside the garment trade, the printing and publishing of periodicals and newspapers produced \$369,297,040; that of books, \$207,434,059; bakeries, \$243,836,287; the making of chemicals, \$174,757,163; of electrical machinery, \$182,694,349; meat-packing, \$174,888,081; the making of prepared feeds, \$100,483,257; of miscellaneous machinery, \$106,450,875; grain mills, \$102,813,647.

Cities listed as respectively producing manufactures in excess of \$100,000,000 in 1937 were: New York City, \$3,962,292,660; Buffalo, \$623,102,794; Rochester, \$303,364,282; Niagara Falls, \$141,542,110; Syracuse, \$107,434,697.

Mineral Production. The yearly total of minerals produced from New York's own soil (not to include the output of industries treating minerals imported from elsewhere nor the important industry in the fabrication of pottery) attained \$77,665,974 for 1937. The chief products according to value were petroleum, natural gas, stone (chiefly for concrete, road-building, and railroad ballast), cement, sand and gravel, salt, clay products, and zinc. New York continued to produce somewhat less than one-fifth of the yearly yield of Pennsylvania-grade petroleum, commanding special prices on account of its particular uses; the State's output of this petroleum decreased to a total of 5,045,000 barrels for 1938, from 5,478,000 barrels, \$14,140,000 in value, for 1937; a sharp recession in the price discouraged activity in the oil fields in 1938, and this easily affected output as might be expected in a State deriving its production from 19,900 separate active wells averaging even in 1937, under much stimu-

lation, only four-fifths of a barrel a day. The marketed yield of natural gas, sharply on the increase, attained 21,325 million cu. ft. for 1937; in value, \$12,388,000. While a reliable computation of the yield for 1938 was not yet at hand, the completion of 31 new producing wells in Steuben and Allegany counties and further development in Oneida County were reported. The additional supply in Steuben and Allegany counties came from depths of 4000 feet or more penetrating the Oriskany sand, source of the important upgrowth of the output of natural gas subsequent to 1934.

Production of Portland cement diminished moderately; the mills' shipments fell to a yearly total of 5,720,922 barrels, for 1938, from 6,106,183 for 1937; in value, to \$7,893,270, from \$8,825,785. The production of salt fell off considerably, to 1,717,064 short tons (1938), from 2,084,867 (1937); in value, to \$5,467,077, from \$5,795,551. The value of clay products for 1937 was stated by the U.S. Bureau of Mines as \$5,435,096, but this total, published in 1939, omitted the formerly included element of pottery, providing a yearly production of some \$4,400,000.

Outside the total yearly production of native minerals, New York's industries treating minerals brought from elsewhere played an important part in creating goods. The production of coke in by-product ovens amounted to 3,948,833 net tons for 1938, and to 4,946,964 tons, in value \$29,853,516 for 1937. Makers of pig iron shipped from their furnaces 1,222,832 gross tons of pig iron (1938) as against 2,702,072 tons (1937); by value, \$25,450,764 (1938), and \$55,789,609 (1937). New York and New Jersey together made, in 1938, 1,347,802 gross tons of open-hearth steel ingots and castings; in 1937, 2,789,413 tons. New York's output of ferro alloys for 1937, 166,137 long tons, had a value of \$18,079,832.

Education. For the academic year 1937-38 (the latest covered as to the data that follow) New York's population of age up to 18 years was stated as 3,371,152. Enrollments of pupils in all public schools numbered 2,260,652; this comprised 1,553,399 in elementary study and 707,253 in high schools; it did not include 202,584 in evening, vocational, and Americanization classes. The year's expenditure for public-school education totaled \$354,109,166, exclusive of \$37,940,737 from proceeds of debt issue. Salaries of the 82,454 public-school teachers averaged \$2500.73.

Legislation. The Legislature, meeting in January, continued in regular annual session until May 20. Prevailingly Republican in both houses, the session worked in harmony, on most points, but not on finances, with Governor Lehman, Democrat. The main budget, as adopted, approximated \$388,000,000, which did not include a supplemental budget carrying \$4,994,000, passed at the close of the session. The divers affected totals fell short by some \$25,000,000 of the total budget that Governor Lehman had presented. His budget had approximated \$415,000,000; this would have generated a deficit, as estimated for the fiscal year ahead, of \$61,000,000; Lehman, accordingly, had recommended new taxes sufficient to cover such an amount. The Republican legislators broke away from this plan early in the session. Assemblyman A. L. Moffat and other of the party's leaders drew a plan for reclassifying itemized appropriations by large groups, determining the total set by Lehman as items under each such group, and cutting totals in the case of three-

fourths of the groups. The plan as drawn reduced the Lehman budget by about \$31,000,000; various adjustments, mainly restorations in the supplemental budget, lessened the saving by about \$5,000,000. As to taxation, the Legislators' plan did away with Lehman's proposed taxation almost in whole; instead, it provided a special tax at one cent on each 10 cigarettes sold at retail, designed to yield \$22,000,000 a year, an additional 50 cents a gallon of excise on liquor, to produce \$9,333,000, and extension of the State's income tax to reach the salaries of Federal employees, to yield \$1,500,000.

As to the direction taken by Republican retrenchment, the Lehman totals most heavily cut were: for State aid to schools (about 30 per cent of the whole budget), by \$9,710,000; capital outlay for highways, by \$7,725,000; outlay for parkways, by \$2,384,000; work on county highways, by \$2,080,000; mental hygiene, by \$1,564,140.

Governor Lehman opposed the Republican budgetary plan; in this he had the support of many in the State. In particular, since the cuts in the totals allowed for the administrative departments and the public schools would compel heads to drop employees and reduce other employees' pay, teachers and civil-service employees felt themselves under attack. Attorney-General Bennett advised the Governor that the State's constitution prohibited the Legislature's altering the executive budget except by removing or reducing individual items or adding items each referring to a single object; and that therefore the proposed lump-sum appropriations were unconstitutional. The Governor and the Republican leaders finally agreed to leave the lump-sum reductions, aggregating about \$7,000,000, namely the total of the cuts in departmental appropriations, to be approved or invalidated by the Court of Appeals, without further delay to the passage of the altered budget. The Governor let the act cutting the contested appropriations become a law without his signature, declaring it unconstitutional in a special message to the Legislature. Other connected bills made into law included enactment of the three taxes previously mentioned, the suspension of automatic increases of salary for the State's employees under existing statute, and cuts in the Governor's proposed appropriations for State aid to schools and to highways, which appeared as lump sums in the executive budget and would therefore not figure in the court contest. A Legislative Auditor was created, to serve the Legislature as adviser in future work on budgets.

Other financial measures granted \$54,000,000, as Lehman had asked, for the State's various contributions to poor-aid; kept in force the 1-per cent emergency income tax, third and fourth cents of the tax on gasoline, and other imposts of temporary application that, taken together, yielded \$100,000,000 a year; required the Comptroller to audit payment in advance of disbursement of State money; revised, in accordance with the State Constitution of 1938, the laws governing the public finance of State and local government; and required domestic life-insurance companies to surrender to the State the unclaimed equities on policies.

Measures in which the State took noteworthy social initiative were: provision of \$1,000,000 a year in subsidy and of \$150,000,000 in immediate or early loans from the State, toward the promotion of housing enterprises in localities; creation of legislative commissions to study labor

relations, home relief, and crime; further legislation, in accordance with the new constitution, to promote and help finance the elimination of crossings of railroad and highway at the same grade; amendments to the State's system of unemployment compensation, including special rating and lower levy for the cost of such compensation in the cases of employers keeping their people steadily at work; committing to the localities the form of poor-aid known as home relief and authorizing them to provide work, under some limitations, for the relief of the needy; keeping up the existing temporary barrier, to the foreclosure of mortgages defaulted as to principal only, for another year. A bill making it a misdemeanor to interfere with a "person's right to work as a driver of a motor truck," regarded as a measure to check violence in truckdrivers' strikes, was passed but was vetoed by the Governor as likely to impair or to destroy fundamental rights of employees.

A change in the State government was initiated by the voting of a proposed constitutional amendment to lengthen the term of State Senators to four years, from two; as an amendment this proposal awaited second passage in 1941 before it could go to the voters for adoption. The appointment of commissioners in lunacy to determine the commitment of the insane was abolished and their task was entrusted to psychopaths chosen from State hospitals. Bills were enacted to safeguard the process of voting by means of the voting machine: boards of election or bipartisan committees appointed by them were required to recount the vote cast in every such machine, and peepholes made in the hood with sandpaper, as well as arrangements of mirrors to enable the voter's selection to be observed, were to be prevented by inspectors. The Governor vetoed a bill giving the courts full power of review over the decisions of the State Civil Service Commission.

Second passage completed the legislative preliminaries to sending to the voters, for their disposal at the general election, a proposed constitutional amendment to permit wagers under the pari-mutuel system at race tracks. A bill forbidding department stores' practice of using "loss leaders," goods offered at a loss in order to attract custom, was passed but vetoed. The State Racing Commission obtained the power to suspend or revoke racing licenses. In the educational field, school busses were authorized to give free transportation not only to children bound to or from public schools but also to those traveling between home and parochial schools. Teachers in the pay of New York City were forbidden to hold more than a single position, some specified exceptions being allowed.

New York City obtained authority to build a bridge between the Battery (in Manhattan) and Brooklyn; to demolish the old elevated-railway structure; to carry out a plan for unifying the ownership and direction of the municipal and private subways, bringing them all into municipal hands.

First Special Session. The decision of the State courts on the issue raised by the regular session's alteration of the appropriations asked in the Governor's budget supported the Governor and invalidated, in part the appropriations made by the Legislature (see above). The Court of Appeals, supporting a decision of the Appellate Division of the Supreme Court, held unanimously, June 21, that the Legislature had not the consti-

tutional power to reduce the departmental appropriations by groups, instead of items; it held valid, however, the reductions made in the sums appropriated for aid to public schools and to highways save for exceptions as to two items therein.

This judicial determination left the State without appropriations for running the departments. A special session was therefore summoned; it convened June 23; adjourned, July 11. The budget was re-enacted, with reductions bringing its total to \$388,500,000; while the cuts made in the Governor's budget were applied in much the same way as the original cuts, with regard to their general incidence, they were itemized as the interpretation of the State's constitution required. The divers appropriations made outside the budget were enacted over again, the judicial rulings being taken to mean that the original enactment of the budget having been invalidated, the regular session's subsequent passage of other appropriations did not satisfy the requirement that the budget act must be passed first.

Senate's Special Session. The State Senate convened, September 6, in special session and received from Governor Lehman charges that had been brought by a special grand jury, against Judge George W. Martin of the County Court of Kings County (Brooklyn). Acting in its judicial capacity the Senate proceeded to try the charges, with a view to the removal of the Judge, if warranted. The Senators, after hearing testimony and counsel's arguments for many weeks, voted (November 16) by 28 to 19 that Martin be not removed; 15 Republicans and 4 Democrats voted to remove Martin, while 18 Democrats and 10 Republicans voted not to remove him. The charges and evidence had largely to do with alleged faulty financial conduct.

Political and Other Events. Governor Lehman entered upon his fourth consecutive term, January 2. His new term was for four years, the tenure of the office having been lengthened from two years by constitutional change subsequent to his election in 1936. By proclamation he designated October 27 as Theodore Roosevelt Day, recommending it to New Yorkers' observance but not declaring it a holiday. Late in the year Lehman made up a commission of authorities to study the question of extending the State civil service so far as possible to cover the occupants of positions still exempt from its requirements. The number of such positions was estimated in the neighborhood of 15,000; Lehman's proposal looked to exempting present holders of positions, notably in the State's institutions, from examination, where their positions should be put under civil-service rules in other respects. See HOUSING; PRISONS.

Federal Control of the Milk Trade. The system of Federal regulation of the market for milk, previously established (see 1938 YEAR BOOK, p. 536) did not secure peace in its field in 1939. Dairy farmers started a strike in August, attacked State troopers guarding milk being trucked over the highway near Syracuse (August 21), and performed other acts of violence in efforts to stop the movement of milk from sources still sending it. The supply reaching New York City was reduced to 54 per cent of the normal. A new contract, proposed by Mayor La Guardia of New York City, was signed by distributors' and producers' representatives August 23 and approved by the Federal Department of Agriculture. The new contract, as interpreted, called for an increase in the price payable to producers, to \$2.15 a cwt., from

the previous \$1.65; but allowance was to be made for certain factors. There followed a rise of $\frac{3}{4}\%$ in the retail price of bottled milk by the quart, delivered, in New York City. The distributors' payments to the producers, for the initial month of September, were announced in the middle of October; they ran at the rate of \$2.08 $\frac{1}{2}$ a cwt. instead of the anticipated \$2.15. Mayor La Guardia denounced the price as "chiseling in the very lowest sense" and blamed the Department of Agriculture for not requiring payment at \$2.15. Late in October, 37 distributors, facing prospect of a producers' strike, agreed to make up the full demanded \$2.15 price; other distributors were threatened with the loss of their supply of milk. In November, distributors had to grant higher wages to their drivers and raised the price of milk by the quart another quarter-cent.

Civil and Criminal Justice. The State's Court of Appeals held (October 30) that the act of 1939 forbidding teachers in the public schools of New York City to hold more than one position was constitutionally sound, although depriving Jacob Hendon, the litigant, of his property in a teaching contract. Demetrius Gula and Joseph Sakola, tried in New York City, were found guilty, January 27, of the fatal kidnapping of Arthur Fried of White Plains; the verdict was the first applying a new law that made punishment by death mandatory when the jury had rendered a verdict of guilt, without recommending mercy, in a case where kidnapping resulting in the death of the victim was charged; the two defendants had been arrested by the Federal Bureau of Investigation; they had made separate confessions to the Federal officers but repudiated the confessions in court. An amendment enacted in 1939, to the Surrogate Act, was invoked (October 30) by Surrogate G. A. Wingate in Brooklyn, in impounding \$6000 paid in settlement for causing the accidental death of Isaac Weidman, a naturalized German Jew, although the German Government presented a power of attorney from the widow; the changed Act allowed the surrogate to impound when it appeared that the beneficiary of a trust would not get the benefit of what was due him. The investigation of auditors for the State workmen's compensation fund, conducted by District Attorney Dewey of New York County, resulted in several auditors' pleas of guilty and the indictment of 19, on charges of taking bribes to let employers defraud the State by paying less than their proper premiums for insurance.

Labor Disputes. A State law making it a punishable offense to furnish unlicensed guards for employers in strikes went into effect; eleven men received suspended sentences to fine or imprisonment under it (June 13) in New York City's Court of Special Sessions. Strikes in the State during the year were for the most part of minor importance (see, however, reference to the milk trade, above). An association of employers made a new contract for three years with the Truck Drivers', Dockworkers' and Helpers' Union (affiliated with the A. F. of L.), August 3, providing moderate increases in some wages; the new agreement was expected to preserve the State from disturbances of internal transportation such as had occurred in Rhode Island and Massachusetts. The State Labor Relations Board, in a decision published October 12, allowed ballots that made specific provision, in an election on the question of a bargaining representative for the employees of the Hotel St. George, for votes re-

jecting both unions presented as candidates; the ruling declared the choice of a union a right but not an obligation. About 5000 members of the International Longshoremen's Association struck early in November and resumed work on the 18th without winning their main demands for \$1.05 an hour and 40 hours a week.

Local Events in the State. *Rochester* was made the testing-ground of the Federal Surplus Commodities Corporation system of distributing food stamps presentable for certain kinds of food supplied to the poor by the Government; reports of the success of the plan in that city led to its spread among other parts of the State. At the proposal of the State's joint legislative committee studying employment for the middle-aged, 36 industries in Rochester, employing together about 35,000 people, united on procedure, in hiring, designed to do away with discrimination against the older applicants. The Town of Cortlandt, in Westchester County, brought suit in the State courts, to attack the municipal charter given by the Legislature in 1938 to *Peekskill*, then a village within Cortlandt; to this end an injunction was sought against an intended election in November to choose the first officials of the intended city, which was to come into being in January, 1940. The Court of Appeals, November 21, found Peekskill's charter inoperative because of fault in the procedure for its adoption.

At *Niagara Falls* the Niagara Falls Bridge Commission made plans for the construction of a new bridge, by name the Rainbow Bridge, in the stead of the Falls View Bridge, swept off by ice in 1938; the span was to rest 29 feet higher than the old one, which the ice had reached. Near *Cold Spring*, on Long Island, the former country estate of the late Otto H. Kahn, including a mansion in the French chateau style, was bought by New York City's department of sanitation for \$100,000, renamed Sanita Lodge, and opened as a place of recreation for the department's employees and their families. The *Hutchinson River Parkway* in Westchester County imposed a toll of 10 cents, August 20, in reprisal to the charge of a like toll on the connecting Merritt Parkway, in Connecticut.

New York City's Affairs. See separate articles, NEW YORK CITY, and (for World's Fair) NEW YORK WORLD'S FAIR.

Officers. The chief officers of New York, serving in 1939, were: Governor, Herbert H. Lehman (Dem.); Lieutenant-Governor, Charles Poletti; Secretary of State, Michael F. Walsh; Comptroller, Morris S. Tremaine; Attorney-General, John J. Bennett, Jr.; Commissioner of Education, Frank P. Graves.

NEW YORK, THE CITY COLLEGE OF THE CITY OF. A coeducational institution in New York City, founded in 1848. It is governed by the Board of Higher Education and supported by municipal taxation. The enrollment for the autumn of 1939 was 24,375. The total enrollment for the summer session of 1939 was 6299, and for the preparatory high school, 1214. The faculty numbered 925. The income for the year was \$4,413,344. The library contained 234,131 volumes and 63,342 pamphlets. Construction of an addition to the library was in progress. Acting President, Nelson P. Mead, Ph.D.

NEW YORK CITY. Occurrences in 1939 bearing on welfare and prospects of the city were chiefly the opening and first season of the NEW YORK WORLD'S FAIR (q.v.); the determination of

the main features of agreements for the city's acquisition of the privately owned subways; the prosecution of one of the district leaders of the powerful Democratic Tammany organization, James J. Hines; and the discord between the city government and the State Legislature over right of way in taxation and over the reduction of the State's aid to the schools.

King George and Queen Elizabeth of Great Britain visited the city, Saturday, June 10, on their way from Washington to Hyde Park. They spent several hours at the World's Fair and visited Columbia University. See also DISTRICT OF COLUMBIA.

The City and the Fair. New York City spent about \$20,000,000, mainly prior to 1939, toward starting the World's Fair. Much of this sum went to the cost of the city's exhibit, while heavy expenditure was made on the improvement of the sites and on the construction of two miles of subway line (cost about \$1,700,000) to the fair grounds from the (municipal) Independent Subway System's Queens Boulevard line. While the number of visitors drawn by the fair did not admit of close computation, they brought a great deal of additional business to the hotels and retail shops in the city and gave publicity to what it had to offer. The interruption of travel abroad, by reason of the outbreak of a European war in the beginning of September, heightened the fair's worth as advertising for the chief domestic bidder for visitors' trade and thus helped confirm the intention to reopen the exhibition in 1940. See NEW YORK WORLD'S FAIR.

City to Purchase Transit Properties. The municipality signed an agreement giving it the right to acquire the lines of the Brooklyn-Manhattan Transit system by payments to the total of \$175,000,000; executed on June 30, this agreement had next to receive the ratifications of sufficient majorities of each of the numerous groups holding one or another of the securities of the system. A similar agreement with the representatives of groups of holders of securities of the Interborough Rapid Transit and Manhattan Elevated Railway companies, signed August 31, provided for the municipality's acquiring these companies' lines for \$151,248,187. The city had previously (see YEAR BOOK, 1938, p. 537) acquired the Manhattan Elevated system's Sixth Avenue line; it completed in 1939 the demolition of this line, freeing Sixth Avenue from the incumbrance of the elevated structure and rendering it one of the axial routes of Manhattan Island for vehicular movement. The city administration's purpose to acquire and remove the elevated structure from other avenues was aided in September by proceedings in the Federal District Court advancing the intended foreclosure of the Manhattan system in the interest of bondholders; it was delayed, however, by moves on behalf of the employees who wished to keep their positions. Proceedings were started, in advance of acquisitions of the B.M.T. system, with a view to acquiring and removing the elevated line on Fulton Street in Brooklyn.

Prosecutions. A Tammany veteran, one of the elder members of the Democratic organization in New York County, James J. Hines, leader of the 11th Assembly district, was convicted, February 25, of conspiracy with operators of a lottery; Co. Dist. Atty. Thomas E. Dewey conducted the prosecution before Judge C. C. Nott, Jr., in the City's Court of General Sessions. The

case was a retrial; Judge Pecora had declared a mistrial in Dewey's original attempt to convict Hines in the previous September. The prosecution brought forward in the second trial, evidence to show that Hines had used his influence at divers times to protect lottery men from the police and that one of the city Magistrates, Hulon Capshaw, had dismissed cases against such men as a favor to Hines. The conviction, admitting of a heavy prison sentence, was appealed and still awaited final disposal late in the year. Hines, however, was sentenced, March 23, to serve an indeterminate sentence from four to eight years in State Prison. The effect of the case was greatly to encourage the supporters of political reform, to strengthen the fidelity of the police, and to augment the popular political following of Dewey.

Louis Buchalter, commonly called Lepke, alleged leader in an organization carrying on criminal practices on a great scale, was prosecuted by the Federal authorities, with other defendants, on charges of conspiracy to violate the Federal law as to traffic in narcotics. Buchalter was convicted on December 20.

Fritz Kuhn, leader of the German-American Bund, was convicted, November 29, by a jury in the Court of General Sessions, on a charge of grand larceny, and was sentenced to serve from 2½ to 5 years in State's Prison. For the previous investigation of Kuhn's alleged pro-Nazi activities, see under DIES COMMITTEE. The trend of the prosecution's case was to establish that Kuhn had used certain sums of the money of the Bund for purposes of his own, without accounting for it.

Municipal Finances. The State Legislature enacted in 1939 a tax that lessened the flow of a considerable part of the city's income: the State tax on cigarettes, at 2 cents for the standard package, added to the city's tax of 1 cent a package for poor-relief and to the Federal taxation, raised the cost of retailed cigarettes so high as to reduce sales and thus at once cut the city's income and disappoint the State authorities.

Aid to the Poor. The cost of all aid to the poor, from public funds, except for unemployment benefits (ranked as insurance), ran at the rate of \$21,180,231 a month for June: this was 2.3 per cent lower than for May; 6.8 lower than for May, 1938; the payroll of the WPA carried \$11,624,299 of the total, general poor-aid \$6,972,434, and old-age assistance \$1,284,219, which a little surpassed the cost of aid to dependent children. For July the cost of general poor-relief, somewhat lower than for June, was \$6,781,216. This item, of particular importance to the city as it had to be met in great part from municipal income, was affected unfavorably by the enforced reductions that occurred in the load of the WPA in accordance with the new Federal statutory mandates, but favorably by the improvement in many lines of business. This improvement set in early in 1938 and was stimulated by the outbreak of war in Europe, an anticipated cause of employment and of productive and mercantile activity.

Chief Structural Changes. A municipal airport was opened for service, at North Beach, October 16. It occupied land near the northeastern corner of the borough of Queens; the City had bought this land from the Curtiss-Wright interests in 1937; the surface thereafter had been improved by filling and five concrete hangars were constructed. The cost, stated as between \$40,000,000 and \$45,000,000 was born in part by the city

and in part by the WPA; the WPA performed the work. Commercial lines of aviation serving New York had previously made the Newark airport their place of landing; they sought to use North Beach as soon as it was completed; Newark, which stood to lose business by the change, opposed it in hearings before the CAA.

Queensbridge Houses, in the Borough of Queens, greatest in size of the housing developments built in the United States until that time, opened for occupants October 25. It was built by the New York City Housing Authority (as to which, see HOUSING) at a cost of \$13,936,686. Five of what would eventually be six blocks of apartments were virtually completed by the end of the year; all six were to contain 3149 domiciles, having quarters for 11,400 persons; rent was to run from \$4.55 by the week, for 2½ rooms, up to \$5.90 for 6½ rooms, inclusive of gas, electricity, heat, and hot water: the intended tenants were those getting not over \$1400 a year.

Important works in progress included the Belt Parkway, reported in September as three-eighths of the way to completion; it was to extend for 31 miles along the borders of Queens and Brooklyn and was expected to cost \$28,000,000, inclusive of a Federal allotment of \$24,000,000. The City Housing Authority announced in September plans for the construction of 18 apartment buildings in the area of Brooklyn bounded by Atlantic, Rochester, and Buffalo Avenues and Bergen Street. The City applied without success to the War Department and thereafter to the President for permission to build a bridge across the East River at its mouth, between Battery Park and Brooklyn, and having a pier on Governor's Island. The north tube of the Lincoln Tunnel (between Manhattan and Weehawken) was sealed with the intention that it should remain closed until increase in traffic should require its use. At Rockefeller Center in mid-town Manhattan, the last of the 14 buildings erected by John D. Rockefeller in the course of eight years at a cost of about \$100,000,000 was finished except for details preparatory to occupancy early in 1940. The group, erected in years of economic hardship, had given work to great numbers; it provided quarters for many enterprises of a cultural character. With regard to the municipality's planning of additional capital expenditure for new undertakings of public construction, Mayor La Guardia notified the City Planning Commission, September 14, that the yearly allowance for this purpose would be restricted to \$20,000,000 for the year 1940; this limit did not take in about \$15,000,000 already assigned for public-school buildings. The actual budget for the next year's outlay on such construction exceeded \$100,000,000, as it included allowance for going on with work already started.

The Midtown-Queens vehicular tunnel under the East River was holed through on November 8.

Elections. In addition to contributing a heavy vote toward the State's adoption of the constitutional amendment to permit betting under the pari-mutuel system in connection with horse races, the people of New York City elected a mainly Democratic City Council. Twenty-one members were chosen by the system of proportional representation. This involved recounts after successive eliminations of candidates and transfers of votes to second-choice candidates. Recounts were by boroughs; Brooklyn, to elect seven councilmen, needed 45 counts, to deal with 54 candidates of numerous designations. The final count for the boroughs as a



Courtesy New York World's Fair, 1939

"THE CITY OF WONDERFUL NIGHT"

A night view of the New York World's Fair made during the fireworks exhibition over Fountain Lake in the distance

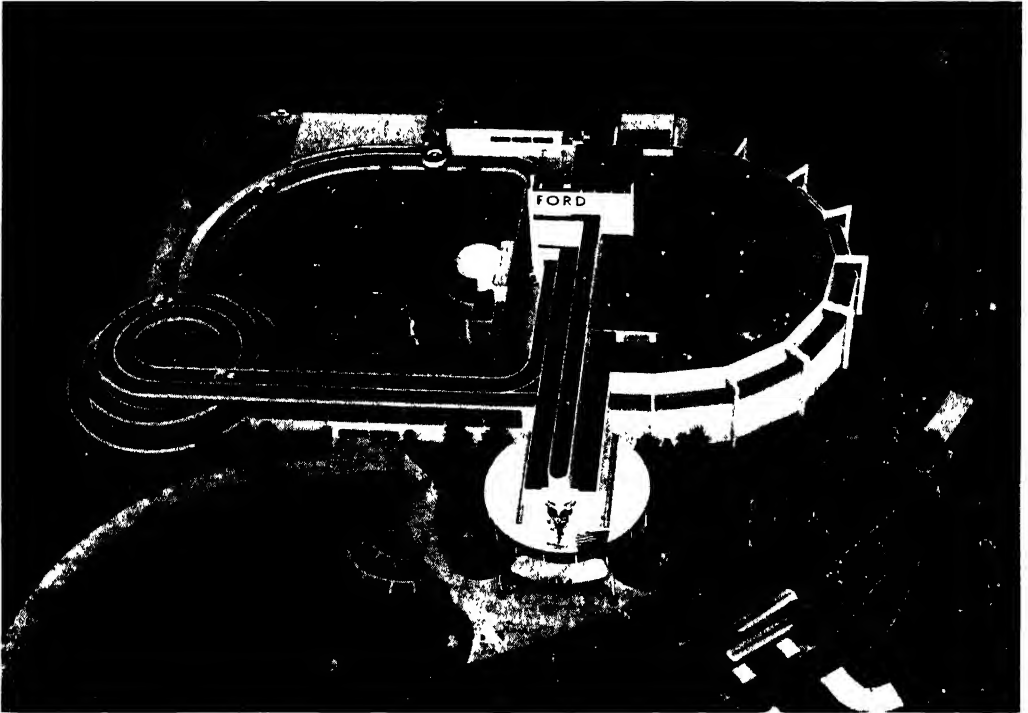


Courtesy New York World's Fair, 1939

THE LAGOON OF NATIONS AND THE COURT OF PEACE

In the distance at the head of the Court of Peace is the United States Government Building flanked by the Hall of Nations. Shown in the Lagoon in the foreground is the water display, a nightly event

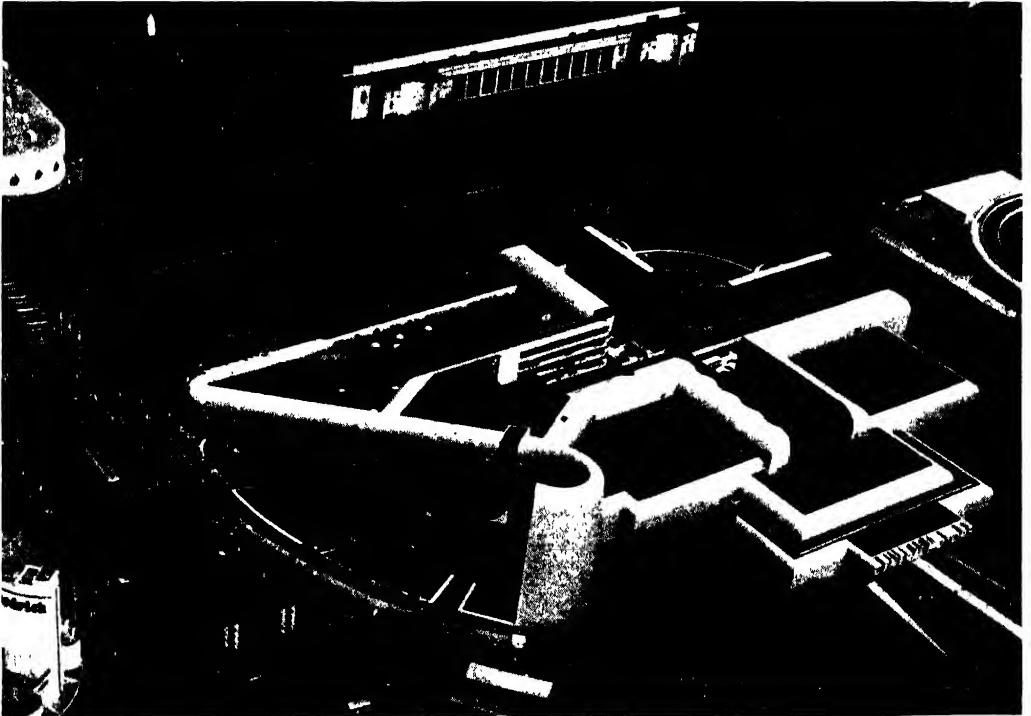
NEW YORK WORLD'S FAIR, 1939



Courtesy New York World's Fair, 1939

THE FORD EXHIBITION

At the left on the spiral can be seen Ford cars in which visitors were taken for a free ride on "The Road of Tomorrow"



Courtesy New York World's Fair, 1939

THE GENERAL MOTORS BUILDING

This ultra-modern structure housed the popular Futurama. The flat-roofed building at the top of the photograph is the New York City Building, a permanent structure

whole was announced November 17. Democrats obtained 14 places, thus acquiring two-thirds of the representation and consequent power to veto certain of the proceedings of the Fusionist municipal administration.

See ART SALES; GARBAGE AND REFUSE DISPOSAL; HOUSING; MUNICIPAL OWNERSHIP; SCULPTURE; TELEPHONY; WATERWORKS AND WATER PURIFICATION.

NEW YORK UNIVERSITY. A nonsectarian and privately governed institution for the higher education of men and women, chartered in 1831, occupying six principal centers of instruction in New York City and subsidiary centers elsewhere, the chief properties being: (1) A forty-five acre campus at University Heights accommodating the liberal arts college for men, the College of Engineering (including the Daniel Guggenheim School of Aeronautics), and a division of the Graduate School; also the Colonnade of the Hall of Fame for Great Americans; (2) at Washington Square on the historic site of the University more than a dozen large buildings on three sides of the park housing the Washington Square (co-educational liberal arts) College, the principal activities of the Graduate School, the professional schools of Commerce, Education, Law, and Public Service, and the Division of General (extension) Education, together with the offices of administration; (3) in the Bellevue Hospital region the buildings of the College of Medicine and the College of Dentistry; (4) in East 80th Street near the Metropolitan Museum, the graduate Institute of Fine Arts; (5) in West 40th Street at Sixth Avenue overlooking Bryant Park, the School of Architecture and Allied Arts; and (6) at Trinity Place in the Wall Street financial district, the Graduate School of Business Administration.

Recent developments include the provision of new buildings involving instruction and equipment costs in excess of \$1,400,000. Two of the buildings, a Sanitary Engineering Laboratory at University Heights and a Public Health Laboratory in conjunction with the Medical College in the Bellevue Hospital district were erected by the City of New York on land provided by the University for the purpose, and are jointly occupied by municipal and University collaborative services. New or remodelled faculty club houses at both University Heights and Washington Square have been provided. Property in Stuyvesant Place near Washington Square consisting of three contiguous three-story buildings has been leased and reconstructed for the teacher-training department of Industrial Arts. At Washington Square a ten-story structure has been acquired and rebuilt for the Law School. The graduate programme in Fine Arts was installed in the new Institute building near the Metropolitan Museum, an Institute of Public Law and Administration has been established, and through support of the Alfred P. Sloan Foundation an Educational Film Institute has been created.

The student enrollment for the year 1938-39 totaled 47,525, including 37,376 resident students studying for degrees. The summer school enrollment was 8642. The faculty numbered 2167, including 220 professors, 134 associate professors, 238 assistant professors, and 1575 of other ranks. The library collections totaled 571,293 volumes. The operating budget approximated \$8,500,000. Gifts in excess of \$500,000 were received. The value of grounds, buildings and equipment ex-

ceeded \$15,000,000. Chancellor, Harry Woodburn Chase, Ph.D., L.H.D., Litt.D., LL.D.

NEW YORK WORLD'S FAIR. Planned as an inspiring panorama of "The World of Tomorrow"—its science, industry, art, and thousandfold other activities—the New York World's Fair opened its first season on Apr. 30, 1939, the 150th anniversary of the inauguration of George Washington as President of the United States, with President Franklin D. Roosevelt as principal speaker. It closed six months later, and will reopen in 1940 from May 11 to October 27, with the additional theme "For Democracy and Freedom."

Dominating the Fair grounds are the 700 foot Trylon and 200 foot Perisphere, symbols of the Exposition, the latter housing "Democracy," a vision of the ideal city of the future. The grounds, 1216½ acres in area, are in Flushing Meadows, Borough of Queens, near the geographical center of greater New York. After the 1940 season the grounds will revert to the City of New York for use as a municipal park. Total paid attendance for the 1939 season was 25,817,265, and grand total attendance, including workers' permits, 32,786,621—a greater number than at any other exposition.

The Fair involved an expenditure of \$155,000,000, of which the City of New York spent \$20,000,000, the State of New York \$6,500,000, and the Federal Government more than \$3,500,000. Investments of private exhibitors are placed at \$5,000,000; foreign governments, \$25,000,000; and States, \$5,000,000. The balance of \$50,000,000 is the Fair's portion, with debentures of \$27,829,500 to meet pre-opening costs.

The Fair grounds were zoned into five principal divisions: Main exhibit area, Transportation, Court of States, Foreign Zone, and Amusement Area. Parking lots were also provided for 43,000 cars.

Twenty-two states and the territory of Puerto Rico were represented in the Court of States, eleven in their own pavilions, while the exhibits of others occupied buildings of unique architecture clustered about a long pool. In the 100-acre zone beyond the Lagoon of Nations, and centering on the United States Federal Building and the Court of Peace, 61 foreign government exhibits were assembled, of which 22 occupied their own pavilions. The building erected by Soviet Russia was being dismantled at the close of the year.

The Federal Building, an imposing structure with two massive towers flanking a colonnade of thirteen columns representing the thirteen original states, houses twelve basic sections devoted to the functions of government. One of the most important exhibits is the original of the Constitution of the United States. An original of the Magna Charta was also exhibited in the British Empire building.

Most popular of the free exhibits was the Lagoon of Nations Display each night, a spectacle of water, fire, sound, and pyrotechnics witnessed by more than 20,000,000 visitors. The interior of the Perisphere was viewed by 5,718,224, and the Swing Mardi Gras Casino, opened only during the last months, was host to 1,145,714.

Among industrial exhibits, General Motors had a total of 13,000,000 visitors, and its popular Futurama, designed by Norman Bel Geddes, drew 5,180,000 to the "America of 1960." Chrysler

Motors state that 7,005,018 visited their exhibit, and Ford Motors announced their total as 8,181,067; of whom 1,965,938 drove about the "Road of Tomorrow." Eight millions visited the Railroads Exhibit, and 1,500,000 of these saw "Railroads on Parade," to which the price of admission was 25 cents. Other attendance statistics included, Goodrich, 5,328,923; National Advisory Committees Building, 110,000; General Electric, 8,000,000—1,400,000 at the House of Magic, 2,700,000 in Steinmetz Hall; Westinghouse, 6,500,000; Firestone, 5,009,135; Masterpieces of Art, 425,000, and the House of Jewels, 1,750,000.

Extending in a broad arc beyond the New York State Amphitheater and along the eastern shore of Fountain Lake was the Amusement Area. Among the concessions, the parachute jump was notable. Its eleven vividly colored parachutes operated from the top of the 250-foot tower, enabling visitors to experience all the thrills of "bailing out" without the usual hazards. This jump was the most popular "ride" of the season with 551,960 people paying to take the 250-foot drop. The best paying concession in the Amusement Area was Billy Rose's Aquacade, which was staged in the New York State Amphitheater; attendance was 5,004,504, and opening on May 4, it played to four shows a day.

An idea of the magnitude of the Fair is gained from the fact that electrical consumption was equal to that of a city of 125,000, a total of 74,540,000 KWH during the 1939 season. Approximately 547,321,500 gallons of water were used at the Fair, not including water used by the Fair Corporation for fountains, displays, etc. A medical force of 73 at the opening of the Fair treated 43,879 cases during the 1939 season. There were 13 deaths and no births on the Fair grounds. The Fair's police force, 600 men at the opening, made 147 arrests throughout the season. There was only one case of pickpocketing.

See ARCHITECTURE; ART EXHIBITIONS; ELECTRICAL TRANSPORTATION; MUSIC; PHOTOGRAPHY; SCULPTURE; TELEPHONY; TELEVISION.

LEO CASEY.

NEW ZEALAND. A self-governing British dominion in the South Pacific. Capital, Wellington.

Area and Population. Exclusive of a number of small islands under its jurisdiction, the area of New Zealand totals 103,722 square miles, of which North Island has 44,281 and South Island 58,092. The population, as estimated for June 30, 1939, was 1,626,486 (including 88,997 Maoris). By the census of 1936, the population was 1,573,810, of which North Island had 1,018,036 and South Island 554,455. By racial origin, 1,484,528 inhabitants were European, 82,326 Maoris (including 15,014 half-castes), and 2899 Chinese. About 60 per cent of the population dwell in communities of 1000 or more persons. The estimated populations of the chief cities on Apr. 1, 1939, were: Auckland, 221,500; Wellington, 157,900; Christchurch, 135,400; Dunedin, 82,800; Invercargill, 26,500; Wanganui, 26,100; Palmerston, North, 25,300; Hamilton, 20,800; Napier, 19,400; Timaru, 19,300; New Plymouth, 19,300; Hastings, 18,900; Gisborne, 16,300; Nelson, 14,000. Births in 1938 (excluding aborigines) numbered 27,249 (18.0 per 1000); deaths, 14,756 (9.7 per 1000); marriages, 15,672 (10.3 per 1000). Immigration in the year ended Mar. 31, 1938, amounted to 38,738 while emigration totaled 36,352.

National Defense. See *History* below; also

articles on EUROPEAN WAR and MILITARY PROGRESS.

Education and Religion. Illiterates form less than 2 per cent of the white population. In January, 1939, there were 2290 public elementary schools with 6363 teachers and 206,002 pupils; 307 private primary schools with 28,386 pupils; and 143 village schools for the Maoris (July, 1938) with 8743 Maori and 1025 other pupils. The University of New Zealand, with 5707 students in 1938, includes Auckland University College, Victoria University College, Canterbury University College and the University of Otago. Two agricultural colleges, at Lincoln and at Massey, had 488 students. Anglicans represented 40.28 per cent of the population in 1936; Presbyterians, 24.66; Methodists, 8.11; Roman Catholics, 13.09.

Production. Principal crops in 1938 were: Wheat, 6,043,000 bu.; oats, 2,641,000 bu.; barley, 1,086,000 bu.; potatoes, 4,716,000 bu. (1937). Wool production in the year ended June 30, 1939, was estimated at 305,000,000 lb. (296,800,000 in 1938). Animal products, 1937, were: Meat, 1,151,700,000 lb.; butter, 307,948,000 lb.; cheese, 204,546,000 lb. In 1939 there were 31,897,091 sheep, 4,564,948 cattle, 683,463 swine and 274,803 horses.

The chief minerals produced are coal (986,000 metric tons in 1937); silver (369,896 fine oz. in 1938); and gold (151,162 fine oz. exported in 1938). With 5924 factories employing 104,344 hands, the total output of manufacturers, in the year ended Mar. 31, 1938, was valued at £113,691,556.

Foreign Trade. Total imports in 1939 were valued at £NZ49,387,000 (£NZ55,422,000 in 1938); total exports at £NZ58,009,000 (£NZ58,376,000 in 1938). Leading exports were dairy products, frozen meats, and wool. Exports (valued in New Zealand pounds) were chiefly distributed as follows: United Kingdom, 48,899,000; Australia, 2,192,000; United States, 1,447,000; Canada, 1,117,000; France, 1,012,000; Germany, 886,000; Japan, 593,000; Belgium, 363,000. Of the imports (valued in New Zealand pounds), the United Kingdom supplied 26,541,000; Australia 7,157,000; United States 6,859,000; Canada, 4,855,000; Netherlands Indies 2,150,000; Japan, 1,208,000; Germany, 1,119,000. See IMPORTS AND EXPORTS.

Finance. The budget for the fiscal year ending Mar. 31, 1940, estimated revenue at £NZ38,020,043 and expenditures at £NZ38,003,043. (These figures do not include war expenditures, moneys for which are derived from additional taxes and loans and disbursed from a special War Expense Account which was set up after the outbreak of hostilities in Europe. See *History* below.) In the fiscal year ended Mar. 31, 1939, actual budget receipts totaled £NZ36,582,000; expenditures, £NZ35,773,000. The public debt on Mar. 31, 1939, was 303,970,272 pounds sterling, representing an increase of £13,768,930 in the course of one year. The average exchange value of the New Zealand £ was \$3.9235 in 1938 and \$3.5482 in 1939.

Transportation. The railroads are virtually all owned by the government. The total mileage was 3319 in March, 1939. In the year ended Mar. 31, 1939, the number of passengers carried was 23,265,768; freight hauled totaled 7,539,012 tons; gross revenue amounted to £NZ8,005,059. The aggregate length of highways in 1939 was 86,988 miles, of which 17,389 miles were unimproved earth and non-surfaced. (See *ROADS AND STREETS*.) The government owns the telegraph and telephone systems. In August, 1939, air lines covered 1887 miles of routes and the weekly mileage was 33,349. There

was a service to Australia and London. Ships in foreign trade, entering ports of New Zealand, numbered 660, totaling 3,084,705 net tons, in 1938.

Government. Executive power is exercised by the Governor-General, appointed by the Crown for five years on recommendation of the Dominion Government. Legislative power rests with the Governor-General and a Parliament of two chambers—the Legislative Council of 39 members appointed by the Governor-General for seven years, and the House of Representatives of 80 members, elected by general male and female suffrage for four years. Governor-General and Commander-in-Chief in 1939, Viscount Galway, who assumed office Apr. 12, 1935. Prime Minister, Minister of External Affairs, of Cook Islands, of Broadcasting, and Native Minister, Michael J. Savage, heading a Labor Cabinet appointed Dec. 5, 1935.

HISTORY

Strengthened by its electoral victory of 1938 on a platform calling for far-reaching socialization of the Dominion's economic system (see 1938 YEAR BOOK, p. 540), the Labor Government during 1939 carried additional reform legislation into effect. With the outbreak of the European War on September 3, the government declared war upon Germany and lent wholehearted economic and military aid to Great Britain. This war effort in some respects hampered the Labor Government's task of internal reorganization, but in other ways speeded the process of socialization.

Economic Legislation. At the beginning of January the government placed in operation the import licensing system decided upon in December, 1938. Permits were also required for the transfer of funds from the Dominion. The purpose was to ensure that sterling obtained through sale of New Zealand products should be utilized in what the government considered the most profitable manner. Sterling reserves of the Reserve Bank had declined rapidly in 1938 due to a decline in export values, excessive imports resulting from the government's high-wage and spending policies, and a flight of capital.

Under the licensing system, imports of luxury goods and of goods capable of domestic production were curtailed to make certain that the Reserve Bank's sterling assets would be sufficient to meet the service on overseas loans. Preferential treatment was accorded imports from Great Britain and then to imports from other Dominions. Imports from other countries were regulated in accordance with their purchases of New Zealand products.

The scheme proved of marked benefit to New Zealand manufacturers and led a number of foreign firms to establish factories in New Zealand. However the amount of sterling exchange in the Reserve Bank remained low and the new import quotas announced early in May for the second half of the year were more drastic than before. The restrictive effect upon imports from Great Britain caused vigorous protests in London. Meanwhile New Zealand importing interests had contested the government's authority to license imports in the courts. On May 22 the Supreme Court ruled that the government had exceeded its powers. Prime Minister Savage immediately called for an amendment of the law to make his trade control policy valid. The exchange shortage was somewhat relieved in July when the British Government advanced £4,000,000 in short-term credits to finance non-governmental imports of British goods into

New Zealand and gave the New Zealand Government a £5,000,000 arms credit.

Another important measure, the Social Security Act of 1938 (see 1938 YEAR BOOK for its provisions), went into effect on Apr. 1, 1939. However the medical profession delayed its full operation by its reluctance to enter into the contracts for payment of health and maternity benefits stipulated in the Act. To meet its mounting obligations, the government in May issued an internal loan of £NZ4,500,000, which was oversubscribed by £NZ204,000.

War Measures. During the European crisis of August leaders of both the government and the opposition pledged their full support of Great Britain in the event of war. When war came this pledge was carried into effect immediately. New Zealand's war effort was marked by an extension of economic controls. Parliament in September and October passed legislation empowering the government to control the amounts and destination of all export shipments; regulate sales and supplies of staple foodstuffs and other necessities; fix internal prices; regulate domestic factory production; increase taxation and import duties; and assume complete control over the Reserve Bank's resources and policies. The Reserve Bank's gold was revalued, with the profit accruing to the government, and the gold reserve margin of 25 per cent was abolished. A postal and telegraph censorship was imposed. An amendment to the Marketing Act authorized the government to acquire any specific commodities and dispose of them abroad or at home.

On October 29 the government announced that Great Britain had agreed to purchase all of the Dominion's exportable meat surplus at prices based on the 1938 average. On November 18 this agreement was extended to surplus butter and cheese. However war demands forced British steelmakers to postpone delivery of materials and supplies for the projected government steel plant, authorized by the New Zealand Parliament in 1938. Despite a rise in the Reserve Bank's sterling funds during November and December, the government announced more drastic import restrictions for 1940.

Military Contribution. New Zealand entered the war with her defenses in far better shape than in 1914. In preceding years, the Labor Government had co-operated with Australia and other units of the British Commonwealth in mutual defense preparations. Military measures were intensified early in 1939, especially after the Pacific Defense Conference was held in Wellington in April with British, Australian, and New Zealand representatives in attendance. Emphasis was placed upon the development of the New Zealand air force. Construction of a branch factory of the de Havilland Aircraft Co. was begun near Wellington in April. On May 23 Prime Minister Savage asked all men between 20 and 55 years of age to register in a special national reserve for home defense.

On July 20 the British Government advanced New Zealand a £5,000,000 credit to be used for government purchases, mainly of armaments and war materials. With this additional aid mechanization of the Dominion's coast defenses and field artillery was completed, the naval units were modernized and placed on a war footing, munitions and war supplies were accumulated, and a plan for training a minimum of 1300 pilots and other aircraft personnel for service at home or with the British forces was placed in operation. The first group of pilots trained under this plan was gradu-

ated on November 22. On December 17 New Zealand joined with Australia, Canada, and Great Britain in a much more ambitious Empire air training scheme (see CANADA under *History* for details), which called for the contribution of 10,000 pilots, observers, and gunners by New Zealand alone.

At the outbreak of the war the government offered Britain an infantry division for overseas service. By the end of the year nearly 25,000 men had enlisted for foreign service, exclusive of about 15,000 enlistments in the air force, and training of the first division was well advanced. Enlistments for home service reached 35,000 by the end of October. This response encouraged the government to continue the volunteer system, despite some agitation for conscription. The navy, consisting of two cruisers, two sloops, and other auxiliary vessels, was placed at the disposal of the British Admiralty at the onset of the war. One cruiser—the *Achilles*—took part in the defeat of the *Graf Spee*, German pocket battleship, on Dec. 13, 1939. The Dominion also undertook the construction of a military flying field on Kermadec Island as part of the Empire plan for development of air bases in the South Pacific. See EUROPEAN WAR; MILITARY PROGRESS.

The government estimated the cost of defense preparations during 1939–40 at £NZ29,750,000; for the remainder of the war the cost was estimated at £NZ20,000,000 to £NZ30,000,000 annually. To meet this cost the government raised death duties by one-third, income taxes by 15 per cent, and levied higher duties on beer, wines, spirits, and tobacco. In July it arranged in London to refund a £17,191,000 loan maturing on Jan. 1, 1940, through a £16,000,000 issue to be redeemed before Jan. 1, 1945.

Political Developments. The violent political controversy precipitated by the government's import control and other socialization measures continued throughout the year, despite opposition support of Prime Minister Savage's war policies. Early in December the Prime Minister issued an appeal for mutual tolerance, forbearance, and moderation. The National Farmers' Organization replied that it would co-operate with the government to win the war, but would not co-operate with anyone to change the economic system to a Socialist basis. Nation-wide demonstrations against the trade-control program continued, and some opposition element were accused of attempting to establish a Fascist movement.

The Prime Minister also had trouble within his own party. Left-wingers, charging his government with undue conservatism, demanded more direct progress toward socialism at a Labor party conference in June, but were voted down. In December the Savage Government used its wartime powers to forbid a strike of mine workers at Denniston. A subsequent attack upon the Prime Minister's alleged "autocratic control" of the country led to dismissal of James Lee, a left wing Laborite, as Under-Secretary of Finance on December 22. Peter Fraser, Minister of Education, Health, and Marine, was sent to London in October to represent New Zealand in the Empire Conference on the co-ordination of war efforts. He returned to Wellington December 25. He had been named Acting Prime Minister after Prime Minister Savage collapsed in the House of Representatives on August 1.

Other Events. The Governor-General and Lady Galway made a six-weeks' tour of Western Samoa and other Pacific Islands in July and Au-

gust. A Centennial Exhibition, commemorating the 100th anniversary of New Zealand's annexation by the British Crown, opened in Wellington in November, 1939.

See AUSTRALIA, CANADA, and GREAT BRITAIN under *History*.

NICARAGUA, nīk'ā-rā'gwā. The largest in area of the Central American republics. Capital, Managua.

Area and Population. Area, 49,500 square miles; estimated population in 1938, 1,000,000. Chief cities (1938 estimates): Managua, 115,000; León, 32,669; Granada, 21,172; Masaya, 15,000; Matagalpa, 5200. The people are mainly of Spanish, Indian or mixed blood, but there is a considerable infusion of West Indian Negroes on the east coast.

Defense. The American-trained National Guard had 241 officers and 2800 men in 1938, with a trained reserve of 4000. There were a few military airplanes and coast guard vessels. New armaments, including some tanks and anti-aircraft guns, were purchased in 1938.

Education and Religion. About 60 per cent of all adults are illiterate. The school enrollment in 1937 was 48,911. There are universities at Managua, León and Granada. Roman Catholicism is the predominant religion.

Production. Leading occupations: Agriculture, cattle raising, lumbering, manufacturing for local consumption, gold and silver mining. There were exported in 1938 14,261,000 kilos (kilo equals 2.2 lb.) of coffee, 1,950,000 stems of bananas, 14,985,000 bd. ft. of lumber, 1,357,000 kilos of cotton, 336,000 kilos of hides and skins, and 4,776,000 kilos of sugar. Cacao, beans, plantains, corn, and yucca are grown. There are a number of coffee cleaning and sugar grinding mills.

Foreign Trade. Imports in 1938 were valued at 5,119,579 U.S. dollars (\$5,620,871 in 1937); exports, \$5,884,154 (\$7,038,342 in 1937). Values of chief 1938 exports: Coffee, \$2,031,000; gold, \$1,551,000; bananas, \$777,000; lumber, \$377,000. The United States took 67.3 per cent of the 1938 exports (55.4 in 1937); Germany, 14.7 (21.4). Of the imports the United States supplied 59.7 per cent in 1938 (54.2 in 1937); Germany, 10 (15.2); Great Britain, 8.2 (8.5). See IMPORTS AND EXPORTS.

Finance. Budget estimates for the fiscal years ending July 31 balanced revenues and expenditures as follows: 1937–38, 6,340,000 cordobas; 1938–39, 13,279,000 cordobas; 1939–40, 20,281,000 cordobas.

The public debt on Jan. 31, 1939, totaled 8,177,766 cordobas (10,908,947 on Jan. 31, 1938). The controlled exchange rate of the cordoba was \$0.6757 in 1937, \$0.2193 in 1938; curb rate, about \$0.3401 in 1937, \$0.1832 for June 10–Dec. 31, 1938.

Transportation. Railway lines in 1939 extended about 386 miles and 25 miles were under construction. Net income of the government-owned Pacific Railway in 1937–38 was 625,682 cordobas. Roads extended 1670 miles. Nicaragua is on the Pan American Airways circuit and has connections with Honduras and Costa Rica by two Central American air services (TACA and EMAN). In 1938 all three systems carried 6055 passengers to and from Nicaraguan airports.

HISTORY

Political Developments. Although President Anastasio Somoza's four-year term of office was

not due to expire until Jan. 1, 1941, the Constituent Assembly that met Dec. 15, 1938 (see 1938 YEAR BOOK, p. 541-542) extended his term to May 1, 1947. This was done through the adoption on Mar. 22, 1939, of a new Constitution which abrogated the no-re-election provision of the 1913 Constitution and made the Presidential term eight years instead of four. The new fundamental law greatly extended the President's powers but liberalized the existing statutes concerning property, freedom of worship, marriage, protection of mothers and children, public education, labor legislation, and social security.

The inauguration of the President for his second term took place in Managua on March 30, with special Ambassadors from Mexico, Panama and the United States in attendance. The ceremony was denounced as a violation of the 1913 Constitution by Somoza's political opponents in exile in Mexico and neighboring Central American states.

Pacts with United States. Soon after his inauguration, Somoza left for a visit to Washington. He landed in New Orleans May 1, was greeted in Washington May 5 with an elaborate military display, and was lavishly feted during his stay in the American capital. On May 22 a five-point agreement was reached between the two governments through an exchange of letters signed by Presidents Somoza and Roosevelt. President Somoza then returned home via the west coast of the United States, receiving a triumphal welcome upon his arrival in Managua on June 29.

Under the agreements reached at Washington, the Export-Import Bank advanced Nicaragua a credit of \$2,000,000 for the construction of highways and other economic improvements. The loan was unanimously approved by the Nicaraguan Congress on August 7 and the loan contract was signed November 15. U.S. Government engineers were sent to Nicaragua to aid in the construction of the highway projects. Equipment and materials not available in Nicaragua were to be purchased in the United States. The Export-Import Bank also agreed to grant additional credits not to exceed \$500,000 at any one time and to be utilized prior to June 30, 1941, to facilitate payment of Nicaraguan commercial obligations to United States nationals and concerns and stabilize the exchange rate of the cordoba.

Another item provided for the survey of a canal and highway project to link the eastern and western regions of Nicaragua. President Somoza attempted to induce the United States to undertake the trans-Nicaraguan ship canal for which surveys were completed in 1931 by U.S. Army engineers (see 1931 YEAR BOOK, p. 146). But President Roosevelt agreed only to seek authority from Congress for a survey of a barge canal and highway across Nicaragua. Congress authorized the project and the preliminary survey was completed by a U.S. Army commission in the middle of October.

Another outcome of the Washington accords was the establishment in Managua under a bill signed by President Somoza on November 11 of a military academy. Col. Charles L. Mullins, a U.S. Army officer chosen by President Roosevelt, was named director of the academy, with authority to engage instructors from the United States. The academy was to provide at least two years' training for cadets, who on graduation were to receive appointments as officers in the Nicaraguan

National Guard. Other United States government experts were sent to Nicaragua to survey prospects for developing products that would enter the United States market on a non-competitive basis.

Other developments in United States-Nicaraguan relations were the payment to Nicaragua by the U.S. Government on September 3 of \$72,000 in settlement of mutual claims pending between the two countries; the commencement of work on a \$500,000 U.S. legation at Managua on September 28; and the complete nationalization of the National Railways of Nicaragua, in which New York interests formerly owned 51 per cent of the stock. Members of a U.S. Congressional delegation, returning from an inspection of Panama Canal defenses, were feted in Managua on November 21. In a speech to the delegation, President Somoza said that if America became involved in war "Nicaragua will put 10,000 well-trained men at the service of the United States within 24 hours. There will be 40,000 within 60 days, besides our landing fields and other facilities."

German Activities. These developments were regarded as significant in view of German barter and propaganda activities in Nicaragua. Late in March the Reich purchased on a barter basis the entire Nicaraguan cotton crop and large quantities of other products for which other foreign markets could not be found. Nazi propaganda provoked a hostile reaction from Nicaraguan students and other groups. In July a young German who had broken his engagement to the daughter of a prominent Nicaraguan family on orders of Nazi officials was summarily expelled from the country by President Somoza. However a group of students who passed anti-Nazi resolutions on October 29 were held by the police for meeting without a permit and "violating Nicaragua's neutrality."

Central American Relations. After his return from the United States, President Somoza made a tour of the other Central American capitals to win support for his plan for a diplomatic union under which the five little republics would be represented by a single legation in each of the world's capitals. Suspicions were voiced in some of the other republics that Somoza aimed to make himself dictator of a Central American union. Nicaraguan political exiles in the neighboring republics carried on propaganda against him. His efforts toward Central American co-operation were also hampered by the unsettled boundary dispute with Honduras (q.v.).

Conferring with President Cortes Castro of Costa Rica in San José in the middle of August, President Somoza sought to win Costa Rica's signature to a treaty authorizing Nicaragua and the United States to proceed with canalization of the San Juan River, which is a vital part of the proposed trans-Nicaraguan canal. The negotiations were continued by the Nicaraguan Foreign Minister during a visit to San José late in October, but in November suspension of the negotiations provoked bitter criticism of Costa Rica in the Nicaraguan press.

Economic Conditions. The outbreak of the European war caused a speculative flurry in Nicaraguan business, marked by a rise in prices of staple foodstuffs and a weakening of the unofficial exchange rate of the cordoba. The government assumed emergency powers by the decree of September 9 to control imports and

exports of all merchandise and the sale of imported and domestic products. Maximum prices were fixed for most staples and rent increases prohibited. By October, however, business had returned to a normal basis and the stringent decrees and exchange regulations introduced in September were relaxed. The greatest mining boom in the republic's history served to offset in part the loss of the German export market. For its imports, Nicaragua turned more than ever to the United States.

NICKEL. Canada is the principal producer of this metal, accounting for about 90 per cent of world production. New Caledonia, the U.S.S.R., and Burma produce the remainder. The Dominion Bureau of Statistics estimates Canadian production in 1939 at 227,089,730 lb., the largest on record. In 1938 the output was 210,572,738 lb.

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	%
Steels.....	60
Constructional steels, stainless steels and other corrosion and heat resisting steels, and steel castings	
Nickel cast iron	3
Nickel-iron alloys	1
Nickel-copper alloys and nickel silvers	10
Nickel brass, bronze and aluminum alloy castings ..	2
Heat resistant and electrical resistance alloys	3
"Monel" malleable nickel, nickel clad, "Inconel"	10
Electrodeposition	8
Non-metallic materials for the chemical industry	1
Nickel salts, ceramic materials, storage battery, materials and catalysts	
Miscellaneous and unclassified	2

Among the major industries using substantial quantities of nickel are: automobile, farm machinery, aviation, railroad, shipbuilding, mining, petroleum, chemical, pulp and paper, power, electrical, food, building, and household equipment. Pure nickel coins have been issued by 34 countries to an estimated weight of 45,000,000 lb. Copper-nickel alloy coins—75 per cent copper, 25 per cent nickel—issued by the United States and other countries since 1880, have an estimated nickel content of 40,000,000 pounds.

The U.S.S.R.'s invasion of Finland late in 1939 called attention to important nickel deposits near Petsamo in the latter country under development by the International Nickel Co. Production had been scheduled for 1940 at the rate of about one million pounds of nickel a month.

See NETHERLANDS INDIES.

H. C. PARMELEE.

NIGER. See FRENCH WEST AFRICA.

NIGERIA. nī-jě'rī-ā. A British West African dependency comprising the colony (1381 sq. mi.; pop., 368,495 in 1936) and the protectorate (includes British Cameroons, 34,081 sq. mi.; pop., 831,103) which is divided into southern and north-

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Production and Trade. The main products (with 1938 export figures) were palm oil (237,000 tons produced; 110,243 tons exported), palm kernels (312,048 tons), cocoa (97,100 tons), groundnuts (180,136 tons), cotton lint (5729 tons), hides and skins (5825 tons), tin ore (10,486 tons), gold (24,970 oz.), and coal. Other products include bananas, ginger, tobacco, rice, mahogany, columbite, wolfram, silver-lead ore, and ghee. Livestock in the whole territory (1938 estimate): 5,630,000 goats, 2,936,000 cattle, 2,188,000 sheep, 476,000 asses, 173,000 horses, 168,000 swine, and 2000 camels. In 1938, imports were valued at £8,632,292 (the chief items being cotton piece goods, tobacco, petroleum, salt, and kola nuts); exports (excluding re-exports of £239,600), £9,461,615 (export values are f.o.b. Nigerian ports and include export duties on palm oil, palm kernels, palm kernel oil, cocoa, bananas, and tin).

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Government. For 1938-39, estimated revenue was £5,698,539; estimated expenditure, £6,631,000. The public debt on Sept. 30, 1938, was £24,764,599 against which the accumulated sinking funds totaled £3,018,230; there is also a supplementary sinking fund amounting to £1,134,536. Nigeria, including the British Cameroons attached to the protectorate for administrative purposes, is under the control of a governor assisted by an executive council; and a legislative council (Order in Council of November, 1922, amended 1928) for the colony and the southern provinces of the protectorate with control over protectorate government expenditure in the southern provinces. The legislative council includes the governor as president, 30 official members, 3 elected members representing Lagos, 1 elected member representing Calabar, and 15 nominated unofficial members. Legislation for the northern provinces is in the governor's hands. Governor, Sir Bernard Bourdillon (term extended to June, 1940). Governor designate, Sir John Shuckburgh.

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expected that about two-thirds of the prize money—\$35,462—would go to the Caroline Institute for Scientific Research, which makes the awards, and the remainder be returned to the original fund. The 1938 prize in physiological medicine, held over from that year, was awarded to Dr. Corneille Heymans, professor of pharmacodynamics at the University of Ghent, for his detection of the importance of the sinus aorta mechanism in breathing.

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Agriculture. North Carolina harvested, in 1939, 6,654,800 acres of principal crops; this was about one-twentieth more than the average for the decade 1928-37. Corn and hay took more than half of the acreage of 1939, and cotton ranked third in extent, but for value tobacco, grown on a relatively restricted area, exceeded all three. Tobacco, on 815,800 acres, made 773,-

810,000 lb. (estimated value on the farm, \$121,010,000); corn, on 2,466,000 acres, 48,087,000 bu. (\$33,661,000); cotton, on 746,000 acres, 455,000 bales (\$21,158,000); tame hay, 1,107,000 acres, 991,000 tons (\$13,973,000). Peanuts, on 255,000 acres, produced 290,700,000 lb. (\$10,174,000); potatoes, 82,000 acres, 8,200,000 bu. (\$5,576,000); sweet potatoes, 77,000 acres, 8,624,000 bu. (\$6,037,000); wheat, 425,000 acres, 5,100,000 bu. (\$4,692,000); oats, 253,000 acres, 5,692,000 bu. (\$2,618,000); peaches gathered for market, 1,395,000 bu. (\$1,814,000).

Manufacturing. Totals on the manufacturing activity of North Carolina during 1937, taken from the U.S. Census of Manufactures as published in 1939 (with figures for 1935 in parenthesis) follow: Establishments engaged in manufacturing numbered 2986 (2599) and employed 258,771 wage-earners (227,100), who received \$189,265,474 (\$148,922,367); they produced \$1,384,737,686 in value of output (\$1,103,910,930), to which sum their processes of manufacture contributed \$475,834,443 (\$368,892,621).

The greatest single classification, as to output of goods, was the manufacture of cigarettes; this industry had 10 establishments in 1939, employed 16,421 wage-earners, whose wages were \$14,536,210, and produced \$536,915,093 in output, to which sum its processes of manufacture contributed \$112,076,230. Some of the other industries surpassed it in employment and totals of wages; if taken as one group, the several textile industries predominated also in the creation of value by the processes of manufacture. Among the textile manufacturers, the weavers of cotton goods produced \$188,331,604; their wage-earners numbered 65,892 and received \$49,578,424, and the contribution of the manufacturing processes to the value of the output totaled \$83,052,589. Spinners of cotton yarn, employing 38,266 wage-earners, paid them \$22,642,982, and made goods to the value of \$101,680,175, presumably duplicated at least in part in the output of the weavers, but to which the spinners by their own manufacturing processes contributed \$40,974,730. Makers of hosiery paid wages of \$27,069,354 to 34,098, attained \$79,809,982 in output, and contributed thereto by manufacture \$41,107,988. Weavers of rayon employed 11,665, paid them \$9,289,747, produced \$45,291,728, and contributed thereto \$15,888,433. The making of furniture totaled \$48,412,936; of lumber and timber products, \$26,585,200.

Education. For the academic year 1937-38, the latest covered by the data that follow, North Carolina's inhabitants of school age (from 6 years to 21) were reported to number 1,110,555. Enrollments of pupils in the public schools totaled 881,874; this comprised 700,672 in elementary study and 181,202 in high schools. The year's current expenditure for public-school education amounted to \$29,151,402. It included salaries to 24,899 teachers and principals. Among these, the teachers received an average of \$850.

Legislation. A regular biennial session of the Legislature convened in January. It voted a budget carrying total appropriations for the next two years to the approximate amount of \$155,000,000. It preserved the previously temporary tax of 3 per cent on sales of goods and strengthened its application by passing a supplementary tax on goods bought outside and brought into the State for use. The rate of taxation on chain stores was increased. The Legislature dealt with recommended changes in the voting laws. Charges that

exports of all merchandise and the sale of imported and domestic products. Maximum prices were fixed for most staples and rent increases prohibited. By October, however, business had returned to a normal basis and the stringent decrees and exchange regulations introduced in September were relaxed. The greatest mining boom in the republic's history served to offset in part the loss of the German export market. For its imports, Nicaragua turned more than ever to the United States.

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Agriculture. North Carolina harvested, in 1939, 6,654,800 acres of principal crops; this was about one-twentieth more than the average for the decade 1928-37. Corn and hay took more than half of the acreage of 1939, and cotton ranked third in extent, but for value tobacco, grown on a relatively restricted area, exceeded all three. Tobacco, on 815,800 acres, made 773,-

810,000 lb. (estimated value on the farm, \$121,-010,000); corn, on 2,466,000 acres, 48,087,000 bu. (\$33,661,000); cotton, on 746,000 acres, 455,000 bales (\$21,158,000); tame hay, 1,107,000 acres, 991,000 tons (\$13,973,000). Peanuts, on 255,000 acres, produced 290,700,000 lb. (\$10,174,000); potatoes, 82,000 acres, 8,200,000 bu. (\$5,576,000); sweet potatoes, 77,000 acres, 8,624,000 bu. (\$6,037,000); wheat, 425,000 acres, 5,100,000 bu. (\$4,692,000); oats, 253,000 acres, 5,692,000 bu. (\$2,618,000); peaches gathered for market, 1,395,000 bu. (\$1,814,000).

Manufacturing. Totals on the manufacturing activity of North Carolina during 1937, taken from the U.S. Census of Manufactures as published in 1939 (with figures for 1935 in parenthesis) follow: Establishments engaged in manufacturing numbered 2986 (2599) and employed 258,771 wage-earners (227,100), who received \$189,265,474 (\$148,922,367); they produced \$1,384,737,686 in value of output (\$1,103,910,930), to which sum their processes of manufacture contributed \$475,834,443 (\$368,892,621).

The greatest single classification, as to output of goods, was the manufacture of cigarettes; this industry had 10 establishments in 1939, employed 16,421 wage-earners, whose wages were \$14,536,210, and produced \$536,915,093 in output, to which sum its processes of manufacture contributed \$112,076,230. Some of the other industries surpassed it in employment and totals of wages; if taken as one group, the several textile industries predominated also in the creation of value by the processes of manufacture. Among the textile manufacturers, the weavers of cotton goods produced \$188,331,604; their wage-earners numbered 65,892 and received \$49,578,424, and the contribution of the manufacturing processes to the value of the output totaled \$83,052,589. Spinners of cotton yarn, employing 38,266 wage-earners, paid them \$22,642,982, and made goods to the value of \$101,680,175, presumably duplicated at least in part in the output of the weavers, but to which the spinners by their own manufacturing processes contributed \$40,974,730. Makers of hosiery paid wages of \$27,069,354 to 34,098, attained \$79,809,982 in output, and contributed thereto by manufacture \$41,107,988. Weavers of rayon employed 11,665, paid them \$9,289,747, produced \$45,291,728, and contributed thereto \$15,888,433. The making of furniture totaled \$48,412,936; of lumber and timber products, \$26,585,200.

Education. For the academic year 1937-38, the latest covered by the data that follow, North Carolina's inhabitants of school age (from 6 years to 21) were reported to number 1,110,555. Enrollments of pupils in the public schools totaled 881,874; this comprised 700,672 in elementary study and 181,202 in high schools. The year's current expenditure for public-school education amounted to \$29,151,402. It included salaries to 24,899 teachers and principals. Among these, the teachers received an average of \$850.

Legislation. A regular biennial session of the Legislature convened in January. It voted a budget carrying total appropriations for the next two years to the approximate amount of \$155,000,000. It preserved the previously temporary tax of 3 per cent on sales of goods and strengthened its application by passing a supplementary tax on goods bought outside and brought into the State for use. The rate of taxation on chain stores was increased. The Legislature dealt with recommended changes in the voting laws. Charges that

about 200 felons had been pardoned during the last five months of the administration of Governor Johnston caused the State Senate to call upon the Board of Pardons for information on all recommendations for executive clemency made in the previous two years. A bill to extend the provisions of the law of 1937 setting wages and hours for certain kinds of work in the State was killed, on its proponent's declaring that the measure had been over-amended and thus made weaker than the earlier act.

Political and Other Events. The monthly rate of the dispensations of public aid to the needy classes of the population of the State, in June 1939, was \$3,820,000; this included \$1,585,000 paid by the WPA, \$1,118,000 by other Federal work of construction, and somewhat less than \$500,000 each for old-age and other Social Security grants and for the people in the CCC; general poor-relief cost only \$38,000. The chief groups of recipients were 41,397 under the WPA and 32,580 getting old-age assistance. The whole monthly cost of public support for dependents (other than institutionalized) only slightly exceeded the rate of \$1 a month per inhabitant of the State. Cotton manufacture was fairly active for the year as a whole.

An allotment of \$200,000 was made by the WPA for the enterprise of seeking deposits of gold in North Carolina's soil; the State's Department of Conservation sought this allotment, hoping that there might result discoveries of gold and consequent investments of capital in mining enterprises. At Durham the North Carolina College for Negroes opened in September the first law school in the State for colored students. At New Bern was reported the finding of the lost plans of John Hawks, 18th-century architect, for the so-called Tryon Palace; this building, completed after 1767, served as the Royal Governor's residence; a movement was started with a view to its reconstruction from the original plans. Near Center Hill was found in March an inscribed stone, the second of the kind, purporting to throw light on the fate of Virginia Dare and Sir Walter Raleigh's Roanoke colony (see also YEAR BOOK, 1938, p. 544).

Officers. The chief officers of North Carolina, serving in 1939, were: Governor, Clyde R. Hoey (Dem.); Lieutenant-Governor, Wilkins P. Horton; Secretary of State, Thad Eure; Treasurer, Charles M. Johnson; Auditor, George Ross Pou; Attorney General, Harry McMullan; Superintendent of Public Instruction, Clyde A. Erwin.

NORTH CAROLINA, THE UNIVERSITY OF. A State institution for the higher education of men and, with restrictions as to admission, of women in Chapel Hill, N. C., founded in 1789. The enrollment in the autumn of 1939 was 3845, of whom 3338 were men and 507 women. In correspondence and extension courses 1385 were registered. In the summer session of 1939, 1818 students were registered. The resident faculty numbered 290. The endowment amounted to approximately \$2,000,000 and the budget for the year was \$1,872,700. The library contained about 390,000 volumes. Additional buildings erected: School of Medicine, five dormitories, dining hall, building for zoology, addition to Carolina Inn. President, Frank Porter Graham, M.A., LL.D., D.C.L., Litt.D., Dean of Administration at Chapel Hill, Robert Burton House, A.M., LL.D.

NORTH CAUCASUS TERRITORY. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

NORTH CENTRAL COLLEGE. A coeducational institution of higher learning at Naperville, Ill., founded in 1861. In the autumn of 1939 there was an enrollment of 582 students, of whom 321 were men and 261 women. There were 44 members on the faculty. The productive funds amounted to \$954,000, and the current income for the year was \$192,190. The library contained more than 24,000 volumes. President, Edward Everett Rall, Ph.D.

NORTH DAKOTA. Area and Population. Area, 70,837 square miles; included (1930) water, 654 square miles. Population: Apr. 1, 1930 (census), 680,845; July 1, 1937 (Federal estimate), 706,000; 1920 (census), 646,872. Bismarck, the capital, had (1930) 11,090 inhabitants.

Agriculture. North Dakota's farms harvested, in 1939, 15,966,400 acres in the principal crops; this was about 7 per cent below the average for the decade 1928-37. Wheat in 1939, on 7,885,000 acres, made 84,062,000 bu. (estimated value on the farm, \$56,322,000); barley, on 1,655,000 acres, 30,618,000 bu. (\$8,879,000); oats, on 1,502,000 acres, 35,297,000 bu. (\$7,765,000); corn, 1,030,000 acres, 16,995,000 bu. (\$6,968,000); tame hay, 1,044,000 acres, 1,094,000 tons (\$3,610,000); potatoes, 165,000 acres, 11,880,000 bu. (\$5,940,000); flaxseed, 411,000 acres, 2,055,000 bu. (\$3,185,000); rye, 836,000 acres, 7,106,000 bu. (\$2,061,000).

Manufacturing. Establishments active in manufacturing in North Dakota numbered 340 in 1937 (in 1935, 320) and employed 2854 wage-earners (in 1935, 2551), who received \$3,192,212 (in 1935, \$2,742,211); the output of manufactured goods attained \$45,836,712 (in 1935, \$41,333,019), to which the manufacturers' processes contributed \$10,265,999 (in 1935, \$8,975,659). Butter-making accounted for \$14,512,424 of 1937's output of manufactured goods; it occupied 418 wage-earners in 96 establishments. Flour-mills and other grain mills produced \$7,478,539; establishments dressing and packing poultry, \$1,611,488.

Legislation. The regular 60-day biennial session of the Legislature increased to 5 per cent the rate of the rebate allowed by the State on the payment of the tax on property when made in advance of the due-date. It re-enacted a law authorizing the deduction of a delinquent tax from a State salary payable to the delinquent.

Officers. North Dakota's chief officers, serving in 1939, were: Governor, John Moses (Dem.); Lieutenant-Governor, Jack Patterson; Secretary of State, James D. Gronna; Auditor, Berta E. Baker; Treasurer, John R. Omland; Attorney-General, Alvin C. Strutz; Superintendent of Public Instruction, Arthur E. Thompson.

NORTH DAKOTA, UNIVERSITY OF. A State institution of higher education for men and women at University Station, Grand Forks, N. D., founded in 1883. The enrollment for the autumn of 1939 was 1828. The 1939 summer session had an attendance of 401. The faculty numbered 140. The income, derived from State appropriations, land-grant funds, student fees, etc., amounted to approximately \$500,000. The library contained 108,104 catalogued volumes. President, John C. West, Ed.D.

NORTHEAST NEW GUINEA. See NEW GUINEA, TERRITORY OF.

NORTHERN RHODESIA. See RHODESIA, NORTHERN.

NORTHERN TERRITORY. An Australian Territory. Area, 523,620 square miles; population, 5737 (Mar. 31, 1939, estimate), compared

with 4850 (1933 census). Figures for population are exclusive of full-blood and half-caste aboriginals (16,887 on June 30, 1937). Darwin, the capital, had 1820 inhabitants on Dec. 31, 1938.

Production. Tropical and semi-tropical products are grown on a small scale, but agriculture has made little progress. Livestock (Dec. 31, 1937): 891,640 cattle; 31,662 horses; 26,856 sheep; 388 swine. Wool (greasy) production in 1939 totaled 35,000 lb. Mineral output for the year ended Dec. 31, 1938, was valued at £A214,724 of which gold represented £A109,168. (Australian £ averaged \$3.8955 in 1938.)

Government. The Territory is controlled by an administrator, with headquarters at Darwin, aided by a deputy administrator in Stuart (Alice Springs). In the Australian House of Representatives at Canberra, the Northern Territory is represented by an elected member who takes part in the debates but does not vote. Administrator, C. L. A. Abbott.

NORTH OSSETIAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

NORTHWESTERN UNIVERSITY. A coeducational institution of higher learning in Evanston and Chicago, Ill., founded in 1851. It is composed of a college of liberal arts, a graduate school, and schools of engineering, commerce, journalism, music, education, and speech, in Evanston; and schools of law, medicine, dentistry, commerce, journalism, and University College in Chicago. For the autumn term of 1939 there was an enrollment of 5976 full-time and 9430 part-time students. In the 1939 summer session 4260 students were enrolled. The faculty included 688 full-time and 787 part-time members. The endowment as of Aug. 31, 1939, was \$23,150,000; the total budget for the fiscal year 1938-39 was \$5,300,000. The total gifts to the University during the year ending Aug. 31, 1939, amounted to \$7,097,000. In the various libraries of the University there were approximately 612,000 bound volumes and 375,000 pamphlets. President, Franklyn Bliss Snyder, inducted Nov. 15, 1939.

NORTHWEST TERRITORIES. The vast area in northern Canada, east of the Yukon, provisionally divided, for administrative purposes, into the districts of Franklin (554,032 sq. mi.), Keewatin (228,160 sq. mi.) and Mackenzie (527,490 sq. mi.). Total area, 1,309,682 square miles; population (1939 estimate), 10,000 compared with 9723, including 4670 Eskimos and 4046 Indians, in 1931.

Production. The 285,962 pelts of fur-bearing animals taken during the year ended June 30, 1937, were valued at \$1,178,129. Mineral production (exclusive of radium and uranium) for 1938 was valued at \$568,618, of which silver (581,902 fine oz.) accounted for \$252,993; and gold (6800 fine oz.) for \$239,190. Mineral output in 1937 (aside from radium and uranium) was valued at \$117,978.

Government. The Northwest Territories are governed from Ottawa by a commissioner, a deputy commissioner, and a council of five members (all appointed by the Governor General in Council). Commissioner, Charles Camsell.

NORWAY. A constitutional monarchy of northern Europe. Capital, Oslo. Sovereign in 1939, King Haakon VII, who was elected by the Storting (parliament) Nov. 18, 1905.

Area and Population. With an area of 124,587 sq. mi. (land area, 119,148 sq. mi.), Norway

had a population estimated at 2,921,000 on Jan. 1, 1939 (2,814,194 at the 1930 census). The urban population is approximately 28 per cent. Living births in 1938 numbered 45,957 (15.8 per 1000); deaths, 29,013 (10.0 per 1000); marriages, 24,188 (8.3 per 1000). The 1930 census populations of the chief cities were: Oslo, 253,124; Bergen, 98,303; Trondheim (Nidaros), 54,458; Stavanger, 46,780; Drammen, 25,493.

National Defense. Military service is compulsory. The army on Nov. 1, 1939, consisted of 15,000 active soldiers and 120,000 trained reserves, according to the Adjutant General's Office, Washington, D. C. The air force comprised 1000 men and 100 aircraft. At the beginning of 1939, the navy—designed for coast defense only—was composed of 4 ironclads, 1 mine-layer, 5 destroyers, 3 first-class torpedo boats and 14 others; 9 submarines; 6 fishery protection vessels and about 20 other vessels.

Education and Religion. Primary education is obligatory and there is practically no illiteracy. Enrollment in elementary schools in 1935-36 was 369,861 pupils; in secondary schools, 29,136; the University of Oslo was attended by 4229 students in 1939. Practically the entire population belongs to the state church (Evangelical Lutheran), the 1930 census showing only 91,459 dissenters—12,207 Methodists, 7788 Baptists, 2827 Roman Catholics, 667 Mormons, and 81 Quakers.

Production. About 29 per cent of the working population is engaged in agriculture, forestry, and gardening, 27 per cent in industry, 10 per cent in commerce, 9 per cent in transportation, 7 per cent in fishing and whaling, and 5 per cent in public administration and the liberal professions. In 1938 cultivable land was estimated at 2,099,000 acres (2.8 per cent of the total land area); permanent meadow, 466,000 acres; forests, 18,531,000 acres. The value of agricultural production was more than 500,000,000 crowns in 1938. Yields of the chief cereals in 1939 were (in metric tons): Wheat, 69,400; barley, 126,700; rye, 10,400; oats, 183,200. The 1938 potato crop was 34,452,000 bu.; sown hay, 3,000,000 metric tons; fodder roots, 733,000 metric tons. Livestock in 1938 was: 1,399,000 cattle; 1,778,000 sheep; 429,000 swine; 308,000 goats; 193,000 horses. Cheese manufacture (1938) totaled 18,800 metric tons. The 1938 fishing catch was valued at 86,101,000 crowns; whaling catch, 1937-38, 998,000 bbl. of oil valued at 42,900,000 crowns.

Industrial production in 1938 was valued at about 1,890,000,000 crowns. Iron ore production in 1938 reached the record figure of 1,545,000 tons (1,076,000 in 1937). Output of other minerals in 1938 (in metric tons) was: Cement, 320,000; coal, 780,000 (from Spitzbergen); pig iron, 174,000; zinc (smelter), 46,500; tin (smelter), 200; aluminum (smelter), 29,000; copper, 20,700 (1937); nickel, 900 (1937). Beer produced in 1938 totaled 12,653,791 gal. (U.S.); wool and mohair, 2700 metric tons; rayon, 141 metric tons; wood pulp, 887,000 metric tons. Output of electricity aggregated 9,907,000,000 kilowatt-hours.

Foreign Trade. Imports in 1938 were valued at 1,888,436,000 crowns and exports at 786,746,000 crowns as compared with 1,292,717,000 and 923,258,000 respectively in 1937. For chief classes of imports and exports, and for distribution of trade, see YEAR BOOK for 1938, page 546. Consult also article on IMPORTS AND EXPORTS in the present volume.

Finance. For the fiscal year ending June 30, 1940, ordinary revenue was estimated at 517,-

075,000 crowns and expenditures at 486,731,000 crowns. Actual receipts in 1937-38 totaled 601,107,000 crowns; expenditures, 556,480,000 crowns. The budget for 1938-39 was estimated to balance at 563,030,000 crowns. The public debt on Jan. 1, 1939, was 1,430,395,000 crowns. The Norwegian crown (or krone) was linked to the pound sterling and had an average exchange value of \$0.2484 in 1937 and \$0.2457 in 1938. On Aug. 29, 1939, it was cut loose from the British pound and pegged to the American dollar at the rate of 4.40 kroner to \$1.

Transportation. Norway has about 2500 miles of railway lines, mostly owned and operated by the state. Gross revenues for the 1939 fiscal year aggregated 88,096,000 crowns; expenditures, 99,686,000 crowns. Paved highways extended 25,699 miles in 1939 (see **ROADS AND STREETS**). Civil aviation statistics for 1938 were: Miles flown, 448,629; passenger miles, 1,472,000; mail, luggage, and goods carried, 260 metric tons. Regular flying schedules are confined to the period May to September, inclusive. On Jan. 1, 1939, the Norwegian mercantile marine—the fourth largest in the world—consisted of 4308 vessels of 4,756,000 tons. Gross earnings in 1939 were estimated at between 800,000,000 and 1,000,000,000 crowns. See *History* below.

Government. Executive power resides in the King. He exercises it through a cabinet, which is actually responsible to the parliament. This parliament, the Storting, consists of 150 members. They are elected at intervals of four years, according to geographical districts, by proportional representation. The Storting assembles every year. Its members effect their own division into two chambers, the Lagting, having 38 members, and the Odelsting, 112. The Premier in 1939 was Johan Nygaardsvold, of the Labor party, which held 70 seats in the Storting elected in 1936.

History. The country was in comparatively good shape to meet the situation when war started among leading European powers in September, 1939. Its shipping industry was in a position to serve the demand that the war created. A system of compulsory insurance against unemployment went into effect on July 3, applying to 550,000 employees, more or less; it promised to strengthen the economic structure against shock, in some respects. Relations with Germany were good at the start of the war, although Norway, unlike Denmark, had abstained from an agreement for non-aggression offered by Germany to the Scandinavian neutrals in the spring and discussed in conference by the Foreign Ministers of Denmark, Sweden, Finland, and Norway at Stockholm in May. The country had enough grain to carry it through the next harvest.

Norway's long-established policy of complete neutrality in European wars again guided its course. This policy imposed on the authorities the duty, sometimes difficult, of opposing attempts of either of the warring sides to make unwarrantable use of Norwegian harbors and waters. It also tended to put the government in opposition to popular sentiment in a case where this sentiment should become partial to one belligerent, as against another, as indeed threatened when Russia attacked Finland on November 30.

The government, as war approached, took early action to protect economic essentials from the disturbance to be expected. As early as August 19 the Bank of Norway released the crown from its usual fixed ratio to sterling. A committee of the

banks of the kingdom, September 5, announced that banks would sell no more foreign exchange except for such purposes as warrantable travel and payments for imported goods. On November 13 a widespread dispute as to employment in the industry of transportation, the expected prologue to a strike of 8000 therein employed, was forbidden, and the council of state ordered the compulsory settlement of the dispute by arbitration, before it could halt economic activity.

The merchant marine, during the early months of the war had to support great losses but was actively employed at higher rates for its services than before. A Norwegian source, *Veritas*, computed the total of the country's shipping destroyed by belligerents up to December 1 at 94,000 dead-weight tons; Lloyd's reported the total on December 28 as 23 ships of 61,903 gross tons. Norway's loss in ships, in any case, exceeded that of any other single neutral. Yet the country's merchant marine, 4,765,600 tons on December 1, exceeded the total for January 1 by 108,000 tons and was only 11,000 tons less than for July 1. In December 655,000 tons of new ships were under order or actually under construction; and the government undertook in that month to promote, by means of a loan, the building of a new shipyard to produce 150,000 tons of vessels a year, using a special welding device to reduce the cost of hulls. The marine's gross earnings of 1939 appeared to have exceeded by one-third or more the 620,000,000 crowns of 1938. Much of the gross of 1939 went into higher pay for the seafarers, and thus made its way into the nation's income.

Norway's relations with Great Britain were not seriously disturbed in 1939 by reason of the latter's participation in the war with Germany, though German vessels' tendency to seek Norwegian waters made the continuance of harmony with Great Britain uncertain. British naval vessels also to some extent frequented Norway's territorial waters, and two British destroyers, the *Inglefield* and *Maori*, accompanying a damaged submarine, the *T-53*, were reportedly admitted to the port of Fosteroy, north of Bergen, November 20, pleading damage from stress of weather. The U.S. merchant ship *City of Flint* (see **INTERNATIONAL LAW**; **NEUTRALITY**; **UNITED STATES under Foreign Affairs**), under a German prize crew and carrying the American crew as prisoners, slipping down the Norwegian coast from the Arctic Ocean in an effort to gain a German port, put in at Haugesund, ostensibly to land a sick American. A doctor sent by the Norwegian Admiral in the area, having examined the patient, found him not so ill as to warrant the ship's entry into port. Entering and anchoring nevertheless, the vessel was delivered by the Norwegian authorities to her American crew and the Germans were interned.

At the beginning of the Russian attack on Finland, many of the population, in Norway as in other Scandinavian countries, were greatly agitated by sympathy for the Finns, so that it became somewhat difficult for the government to keep the country out of the Finnish struggle. The kings of Sweden, Norway, and Denmark had met in Stockholm in October, only a few weeks before, with President Kallio of Finland, and the group had re-expressed intentions of immovable neutrality. Norwegians raised a considerable sum in private contributions to the Finnish cause; about 8,000,000 crowns were reported to have been sent to Finland by December 28.

For Norway's participation in the peace efforts

and other negotiations of the Oslo and Scandinavian powers, see BELGIUM, DENMARK, FINLAND, and SWEDEN under *History*. See also CHEMISTRY, INDUSTRIAL; COMMUNISM; MILITARY PROGRESS; NAVAL PROGRESS.

NORWEGIAN LITERATURE. See SCANDINAVIAN LITERATURE.

NOTRE DAME, UNIVERSITY OF. A Roman Catholic institution at Notre Dame, Ind., founded in 1842 for the higher education of men. The enrollment in the summer session of 1939 was 1086, of which number 716 were religious, sisters of religious communities being permitted to attend. The enrollment for the first semester of 1939-40 was 3276. The faculty numbered 230. The general endowment amounted to \$1,010,000, while the income for the year 1938-39, including student fees and departmental income, was \$2,015,274. The library contained 203,008 volumes in the general and department libraries; 16,214 volumes in the law library, and 1251 periodicals. President, the Rev. John F. O'Hara, C.S.C., Ph.B.

NOVAE. See ASTRONOMY.

NOVA SCOTIA, nō'va skō'shya. An eastern maritime province of Canada. Area, 21,068 square miles; population (1939 estimate), 554,000 compared with 408,219 (1931 census). During 1938 there were 12,189 births (22.2 per 1000); 6063 deaths (11.1 per 1000); and 4084 marriages (7.5 per 1000). Chief cities (1931 population figures in parentheses): Halifax, the capital (59,275); Sydney (23,089); Glace Bay (20,706); Dartmouth (9100); New Glasgow (8858); Truro (7901); Sydney Mines (7769); New Waterford (7745); Amherst (7450); Yarmouth (7055). In 1937 there were 139,082 students enrolled in the schools including 13,101 students in the universities and colleges.

Production. The estimated gross value of agricultural production for 1938 was \$29,467,000 (\$28,561,000 in 1937) of which field crops accounted for \$9,658,000 (\$10,811,000 in 1937). Other important items were: Dairy products, \$7,890,000; fruits and vegetables, \$7,382,000; farm animals, \$2,835,000; poultry and eggs, \$1,137,000; fur farming, \$465,000. Livestock (1939): 43,710 horses; 240,000 cattle (including 115,500 milch cows); 143,700 sheep; 44,600 swine. The apple crop in 1939 amounted to 2,212,600 barrels (2,190,700 in 1938). In 1938, with 18,548 men employed in the fisheries, the fish catch was valued at \$8,804,000. The 1937 output of the forests equaled 137,823 M cu. ft. which was valued at \$7,399,065.

Mineral production (1938) was valued at \$26,253,645 of which coal (6,236,417 tons) accounted for \$22,523,802; gypsum (870,856 tons), \$908,383; gold (26,560 fine oz.), \$549,044; salt (44,950 tons), \$194,759. In 1937, from the 1135 manufacturing plants, with 18,088 employees, the net value of products was \$33,146,796 (\$27,788,510 in 1936).

Government. For the year ended Nov. 30, 1938, revenue totaled \$11,804,383; expenditure, \$11,296,664; net funded public debt, \$88,485,229. Estimates for the year ending Nov. 30, 1939, indicate revenue of \$12,125,105 and expenditure of \$12,082,098. The government is administered by a lieutenant-governor (appointed by the Dominion government) who is assisted by an executive council of 8 members who also are members of the House of Assembly of 30 members elected for a term of 5 years by popular vote of the people. Nova Scotia is represented in the Canadian parlia-

ment at Ottawa by 10 members in the Senate and 12 members in the House of Commons. Lieutenant-Governor, Robert Irwin (appointed May 1, 1937); Premier, A. L. MacDonald. See CANADA.

NUCLEAR CHANGES. See CHEMISTRY.

NYA. National Youth Administration (q.v.).

NYASALAND (nyā'sā-lānd; nī-ās'a-). A British protectorate in East Africa. Land area, 37,374 square miles; population (1938 estimate), 1,639,329 including 1894 Europeans and 1631 Asiatics. Chief towns: Zomba, the seat of the government; Blantyre, the commercial capital; Limbe; Lilongwe; Karonga; Fort Johnston; Livingstonia; Port Herald. Education (1938): European—5 primary schools and 101 pupils; African—4218 primary and vocational schools and 208,189 pupils.

Production and Trade. The chief products were tobacco, cotton, tea, maize, coffee, and rubber. Other products were groundnuts, rice, sisal, and tung oil. Livestock in 1936 included 260,764 goats, 222,718 cattle, 55,516 sheep, 72,371 swine, and 220 asses, mules, and horses. Minerals known to exist are gold, copper, iron, bauxite, asbestos, mica, graphite, manganese, and coal. In 1938, imports were valued at £833,324; total exports, £974,729. Of the exports, tea (10,218,821 lb.) accounted for £448,477; tobacco (£3,463,463 lb.), £392,683; cotton (6,853,894 lb.), £99,953. Highways extended 1852 miles in 1938.

Government. For 1938, revenue amounted to £842,626; expenditure, £810,261. The public debt on Dec. 31, 1938 totaled £5,373,820. Nyasaland is under the administration of a governor who is assisted by an executive council of 4 official members. Laws are enacted by the governor with the advice and consent of the legislative council (consisting of the governor, 5 official members, and 5 unofficial members). The report of the commission appointed to inquire into the financial position of Nyasaland was published during October, 1939,—consult *Nyasaland, Financial Position and Future Development* (Col. No. 152; H.M. Stationery Office, London). For the report of the royal commission appointed to look into the question of closer association or co-operation among Northern and Southern Rhodesia and Nyasaland consult *Rhodesia-Nyasaland Royal Commission* (Cmd. 5949; H.M. Stationery Office, London). Governor and Commander-in-Chief, Sir Donald Mackenzie-Kennedy (appointed Feb. 24, 1939).

NYLON. See CHEMISTRY, INDUSTRIAL; RAYON; TEXTILES.

OATS. The United States oats crop of 1939 was estimated at 937,215,000 bu., 12.3 per cent less than the 1938 crop of 1,068,431,000 bu. and 10.7 per cent below the 1928-37 average of 1,049,300,000 bu. The relatively low production total was attributed primarily to substantial acreage reductions. The acreage not harvested for grain was considerably greater than in 1938. The harvested acreage of 33,070,000 was about 7 per cent smaller than that of 1938 and 12 per cent below the 1928-37 average of 37,452,000 acres. Yield per acre averaged 28.3 bu. in 1939 and 30 bu. in 1938. Leading oats-producing States were Iowa with 154,818,000 bu., Minnesota 151,652,000, Illinois 93,540,000, Wisconsin 71,012,000, South Dakota 43,929,000, Michigan 42,712,000, and Missouri 40,920,000 bu. The seasonal average price per bushel received by farmers was 29.5¢ and the estimated value of production was \$276,891,000 in 1939 compared to 23.7¢ and \$253,335,000 in 1938. World production of oats in 1939 (excluding

the U.S.S.R. and China) totaled 3,286,000,000 bu. See *Crop Production in 1939* under AGRICULTURE.
HENRY M. STEECE.

OBERLIN COLLEGE. A nonsectarian institution for the higher education of men and women in Oberlin, Ohio, founded in 1833. The registration for the first semester of 1939-40 was 1913, College of Arts and Sciences 1341, Conservatory of Music 457, Graduate School of Theology 115, while that for the summer session of 1939 was 126. The faculty had 191 members. The productive funds of the institution as of Aug. 31, 1939, amounted to \$19,050,541, and the income for the year was \$1,476,501. The library contained 395,879 bound and 238,229 unbound volumes. The Hales Memorial Gymnasium for Women was erected in 1938-39 at a total cost of \$203,112. President, Ernest Hatch Wilkins, Ph.D., Litt.D., LL.D.

OBITUARIES. See NECROLOGY.

OCCUPATIONAL DEATHS. See ACCIDENTS.

OCEANIA, FRENCH ESTABLISHMENTS IN. A French colonial possession in the Pacific, consisting of the following main groups of islands: Society, Marquesas, Tuamotu, Leeward (Iles sous le Vent), Gambier, Tubuai, and Rapa. Total area, 1520 square miles; population (1938 estimate, 45,000) compared with 43,608 including 37,786 natives and 5290 French in the census of 1936. The main island is Tahiti (600 sq. mi.; 19,029 inhabitants in 1936) of the Society Islands. Capital, Papeete (7061 inhabitants in 1931).

The chief products are phosphates (187,000 metric tons in 1937); copra (19,800 metric tons exported in 1937); fruits and vanilla. In 1938, merchandise imports (in old U.S. gold dollars) totaled \$1,100,000; exports, \$1,100,000. In 1937, 89 overseas vessels (270,668 tons) entered the ports of the colony. The budget for 1938 was balanced at 19,530,600 francs. (Franc averaged \$0.0288 in 1938.) The establishments are administered by a governor aided by an administrative council. Governor, Chastenet de Géry (appointed April, 1937).

OCEAN ISLAND. See GILBERT AND ELLICE ISLANDS.

ODD FELLOWS, THE INDEPENDENT ORDER OF. A society of free white men and women, founded in Baltimore, in 1819. The society is non-political, non-sectarian and its objects and aims are to promote fraternalism, assist the needy, bury the dead, and educate the orphan. It is also active in the promotion of social welfare. The principals of the Order are, friendship, love, and truth.

The society's 115th annual session was held in Minneapolis, Minn., Sept. 18 to 23, 1939, at which time legislation for the Order, continuance of the Moral Education Program, etc., were considered and adopted.

At the close of 1938, the total subordinate membership throughout the world was 876,901. The total Encampment membership was 123,065, the Rebekah Membership, 644,465, the Junior membership, 8771, and the Theat Rho Girls' Club membership, 14,836. The total receipts for the fiscal year ending June 30, 1939, was \$145,781, and the total expenditures were \$139,762, showing a balance of \$6019.

The Order maintains approximately 64 Homes and Orphanages, the present value of which is \$14,394,232. The number of residents therein is

4609. In 1938 the Order expended \$3,836,750 for relief.

The Order also maintains the Educational Foundation, and during 1938-39, loans totaling \$17,000 were made to 78 borrowers in 29 jurisdictions.

The Order is composed of a Sovereign Grand Lodge and 9 Quasi-Independent Grand Lodges (in Australasia, Czecho-Slovakia, Denmark, Latin America, The Netherlands, Norway, Poland, Sweden, and Switzerland), 61 Grand Lodges, 58 Grand Encampments, 34 Department Councils, Patriarchs Militant, 11,855 Subordinate Lodges, and 8701 Subordinate Encampments. The 115th Annual Session of the Sovereign Grand Lodge was held in Minneapolis, Minn.

The officers for the year 1939-40 were: George S. Starrett, Grand Sire; James A. Hagerman, Deputy Grand Sire; E. G. Ludvigsen, Grand Secretary; Robert B. Groat, Grand Treasurer. The Headquarters of the Order are at 12-20 W. Chase St., Baltimore, Md.

OGLETHORPE UNIVERSITY. An institution of higher education for men, founded in 1913 as a revival of the famous institution which existed in Milledgeville and in Atlanta, Ga., from 1835 to 1872. The enrollment for the autumn term of 1939 was 800. The 1939 summer session had an attendance of 210. There were 31 members on the faculty. The income for the year amounted to \$120,000. The library contained 60,000 volumes. President, Thornwell Jacobs, LL.D., Litt.D. See EDUCATION.

OHIO. Area and Population. Area, 41,040 square miles, exclusive of State's waters in Lake Erie, but including (1930) 300 square miles of other water. Population: Apr. 1, 1930 (census), 6,646,697; July 1, 1937 (Federal estimate), 6,733,000; 1920 (census), 5,759,394. Cleveland had (1930) 900,429 inhabitants; Cincinnati, 451,160; Toledo, 290,718; Columbus, the capital, 290,564; Akron, 255,040.

Agriculture. Ohio harvested, in 1939, 10,017,100 acres of principal crops, of which total seven-eighths was in hay and grains. Tame hay, grown on 2,720,000 acres, gave 3,577,000 tons (estimated farm value, \$23,966,000); corn, the foremost crop in both extent and value, produced on 3,425,000 acres 171,250,000 bu. (\$90,762,000); wheat, on 1,906,000 acres, 37,150,000 bu. (\$27,862,000); oats, 1,020,000 acres, 33,150,000 bu. (\$10,608,000); potatoes, 120,000 acres, 12,600,000 bu. (\$10,710,000); apples for market, 5,800,000 bu. (\$3,480,000); tobacco, on 31,100 acres, 28,842,000 lb. (\$3,501,000); soybeans, 461,000 acres, 9,681,000 bu. (\$7,261,000).

Manufacturing. According to the U.S. Census of Manufactures published in 1939 and dealing with 1937, totals for Ohio (with those for 1935 in parenthesis) were: Establishments in operation, 9138 (9142); wage-earners therein employed, 694,205 (579,522); their wages for the year, \$957,650,237 (\$665,855,146); value of manufactured output, \$5,099,816,893 (\$3,660,903,592); contributed thereto by processes of manufacture, \$2,306,627,196 (\$1,655,136,002). The average manufacturing establishment thus employed, in 1937, about 76 wage-earners and created, by its processes of manufacture, distinct from cost of materials, fuel, etc., about \$263,000 as its direct contribution to the value of its output; these ratios were conspicuously high among those for the States; so was the average pay of the manufacturing wage-earner. The ratios indicated the

prevalence of industries operating on a large scale and at the same time occupied to a great extent with skilled and intricate fabrication. The manufactories' wage-earners included more than one-tenth of the population, and their pay was equivalent to \$144 per capita of the whole population.

Steel-works and rolling mills, the foremost industry, produced \$733,351,272 in yearly output for 1937, employing 95,350 wage-earners, or nearly one in seven of all those engaged in manufacturing. The output of rubber tires and inner tubes amounted to \$307,255,214; their manufacture employed 38,719; miscellaneous rubber goods' output came to an additional \$37,119,777. Electrical machinery, apparatus, and supplies attained \$234,152,633 of production, employing 34,479 wage-earners; several other classifications of machinery accounted, together, for more than \$206,000,000 of output. The manufacture of bodies and parts for motor-vehicles, using 28,365 wage-earners, produced \$206,133,617; an additional 12,811 wage-earners, using in part material from the previous classification, produced vehicles worth \$167,916,695. The divers branches of garment-manufacture produced not far from \$160,000,000 in output.

Eight cities' respective manufactures in 1937 attained reported totals above \$100,000,000: The output in Cleveland was \$966,935,327; in Cincinnati, \$413,763,938; Akron, \$337,927,807; Toledo, \$298,325,676; Youngstown, \$222,095,013; Columbus, \$169,717,720; Canton, \$135,431,965; Springfield, \$120,686,925. Dayton, for which the total production of the year was not separately reported, ranked as another leading industrial centre.

Mineral Production. Ohio's total production of native minerals, as stated in 1939 by the U.S. Bureau of Mines, attained \$131,025,104. This did not include the component furnished to former years' estimates, of pottery and refractories. The loss in the new total may be judged from the Bureau's revised estimate for 1936, taking off about \$26,000,000 by reason of the exclusion of pottery and refractories. The chief parts of the total for 1937 came from the production of coal, of clay products, and of natural gas. The mining of coal decreased by about 28.8 per cent, to a total of some 17,920,000 net tons for 1938, from that of 25,178,000 tons (value, \$44,313,000) for 1937. The clay products attained, for 1937, \$23,327,740. The production of natural gas was reported to have decreased in 1938, from the level of 1937, which had produced a total for that year of 42,783 million cu. ft., delivered to consumers and valued at \$19,967,000. Cement was shipped from mills, to the total of 5,258,603 barrels for 1938, as against 5,501,769 for 1937; by value, \$7,094,745 (1938) and \$7,771,268 (1937). Wells yielded 3,298,000 barrels of petroleum in 1938; in 1937, 3,559,000 barrels (value, \$5,820,000); as Pennsylvania crude, a superior grade of petroleum, formed about two-fifths of the year's total, the value of the whole year's output ran relatively high. Salt was produced to the quantity of 1,489,720 short tons in 1938 and 1,733,875 tons in 1937; by value, \$2,562,620 (1938) and \$2,625,644 (1937).

Outside the total production of the State's native minerals, Ohio made coke to the total of 3,703,819 net tons in 1938 and 6,737,881 (\$32,185,945 in value) in 1937. Blast furnaces delivered 4,186,217 gross tons of pig iron in 1938 and 7,724,882 tons in 1937; by value, \$85,186,824 (1938) and \$167,076,855 (1937). Steel ingots and cast-

ings totaled, for open-hearth, 5,372,234 gross tons (1938) and 9,067,944 (1937); bessemer, 1,074,032 gross tons (1938) and 1,747,710 (1937). Ferro-alloys were produced in 1937 to the quantity of 156,653 long tons and the value of \$6,229,723.

Education. Ohio's inhabitants of school age (from 5 years to 18) were stated for 1938 to number 1,470,990. For the academic year 1938-39, enrollments of pupils in the public schools totaled 1,243,793; this comprised 720,879 in elementary study, 473,017 in high schools, 21,236 in kindergartens, 23,398 special students, 934 postgraduates, and 4329 vocational students. The expenditure for public-school education in 1938 (latest stated) totaled \$103,964,547. This included the pay of teachers, averaging \$1558.29. Teachers in 1939 numbered 41,595.

Legislation. The General Assembly convened in regular session January 2, closely following the adjournment of a special session of its predecessor, which was reported to have sat into the early morning of New Year's Day. The new session sat until June 14. Republicans had the majority in both houses, in contrast to the outgoing Legislature, which had been elected in the Democratic sweep of 1936. As the old session had used some of its dying moments to confirm appointments of Davey, the outgoing Governor, the new session gave early attention to nullifying its predecessor's acts. The old session, near midnight of the old year, had confirmed an appointee to the Unemployment Compensation Commission; one of the new session's early acts abolished the Unemployment Compensation Commission and created as its successor a Bureau of Unemployment Compensation, thus automatically cutting off certain of the higher Democratic appointees. Other so-called ripper acts recast and changed the upper personnel of the Tax Commission and the Board of Parole; another enactment, transforming the Conservation Division into a Department of Conservation guided by a newly created Natural Resources Council, had the effect of disturbing incumbents, but was represented as working to take the conservation service out of partisan strife altogether and put it into the hands of long-term appointees; the addition of a third member to the Civil Service Commission tended to upset its even partisan balance.

Responsive to complaints that the previous biennial budget had left the State's finances confused with deficits, deficiencies and additions to debt, the Legislature strove to enact a budget that would keep in balance. The budgetary appropriations for the two years ahead attained \$317,926,000, thus exceeding the corresponding total, \$316,000,000, for 1938-39; it was asserted however, that the new enactment had made full necessary provision against need for later additional appropriation, so far as could be foreseen. New legislation transferred earmarked special funds for a group of State functions to the general fund and thus helped to increase the budgetary total. Early in the session \$5,000,000 was voted to fill a deficiency in the State's contribution to poor-relief in the expiring biennium. The appropriation for such contribution in the two years to follow approximated \$20,000,000. Provision was made for the State's funding the debt incurred by public schools, in their issues of warrants against expected payments, later not received from a source known as the School Foundation; it was estimated that the outstanding warrants might come to as much as \$17,000,000.

The compact signed in 1937 by eight States of the Ohio River basin (see *YEAR BOOK*, 1937, p. 550) as to the pollution of river waters was ratified for Ohio by the Legislature.

Few new State taxes were created; the existing tax on sales of cigarettes was extended, and a similar tax on cigarettes brought into the State for use within it was created; the tax on liquid fuels was continued. The segregation of the proceeds of the tax on intangibles, of those on liquor, and inheritances, for specified purposes was ended, and the revenue of these sources was directed into the general fund. A system was set up for delinquent taxpayers' paying up in installments.

Political and Other Events. John William Bricker, the first Republican Governor to hold the office after the beginning of 1931, was inaugurated, January 9, and with him came into power a Legislature and elected officers prevailingly of the same party. In his first message to the Legislature Bricker asked for measures to undo the existing organization of the politically important Unemployment Compensation Commission, to remove by retrenchment a deficit of \$2,000,000 in the State's general fund, and to put an end to the earmarking of parts of the State's revenue for the benefit of specified lines of expenditure.

Economic activity in the State made a considerable advance, evidenced by the rise of retailers' sales to an excess, for July, of 10 per cent over those of a year earlier. Payments of public money to needy persons for subsistence nevertheless stayed high; for June, they totaled \$19,672,000, of which nearly \$12,000,000 was wages from the WPA, almost \$3,000,000 was from other Federal projects of work and construction, over \$3,000,000 as succor to the special classes tended by the Social Security Administration (especially the aged indigent), and less than \$1,500,000 for ordinary poor-relief. Public support in one form or another went out to about half a million individuals or families; the WPA paid it to some 204,000, ordinary poor-aid went to 90,000, and old-age assistance to 116,000.

Contest over Civil Service. The Democratic opposition denounced the new Legislature's overthrow of the previous Democratic Legislature's State civil-service law as a subordination of the good of the public service to partisan appetite for spoil. Despite the Republican view that the new legislation merely undid the permanent tenure assured under the old law to an undue number of Democrats, a step backward from civil service was detrimental, on its face, in the opinion of many of the reform-minded; thus the minority party found a timely issue with which to press the new administration. Herbert W. Mitchell was appointed as the newly created third member of the Civil Service Commission (see *Legislation*, above). A contest upon the validity of his claim to serve on the Commission was carried to the State Supreme Court. This court decided, October 4, that the appointment was not valid; that the new civil-service legislation, moreover, was not in effect, having been put in abeyance by the force of a popular petition for a referendum on a proposal to keep the Commission at its old membership of two. This petition, circulated throughout the State by the friends of the old Commission, came to the Secretary of State with a purported sufficiency of signatures to require the referendum to be held. There occurred the usual contest over the validity of signatures;

after the Court's decision the Secretary of State sought to help the petition and put the question on the November ballot, but delays in disputes over signatures almost—though not quite—prevented this and deferred the vote to 1940 (see *State Elections*, below).

Other Court Decisions. The State Supreme Court ruled, July 5, that the State Building Authority, designing to carry the cost of construction of mental hospitals for the State's Department of Welfare, could not under the State's constitution bind the State to an obligation exceeding the constitutional limit of \$750,000 of debt; Secretary of State Griffith had previously refused to sign bonds of the Authority to the sum of \$7,500,000. In a case dealing with the immunity of certain public employees discharged by the State, the Supreme Court held that employees, when included even only provisionally in the State civil service, might not be discharged but must be retained until their positions had been filled by examination or had been abolished. Candy, by another decision of the Court, was held to be food and therefore specifically exempt from the State's tax on retail sales; the receipts from the application of this tax to candy were supposed to approximate \$500,000 a year. An act of the legislative session of 1938, raising salaries in the Highway Department, was judged by the Supreme Court to be unsound.

Cleveland. In the Cleveland area the strike of the C.I.O.'s faction of the United Automobile Workers, carried on mainly in Michigan, was waged against the Fisher Body works in July. After about a dozen bizarre murders, occurring in slow succession over a number of years and marked by the baffling discovery of a human member or trunk deftly severed, there came into the hands of the Cleveland police a suspect, thought by them to have committed the latest of these crimes. The man, Frank Dolezal, made an oral confession to policemen, but repudiated it; he afterward (August 24) killed himself by hanging, in the cell where he was held.

Cleveland and, to a less extent, Toledo ran short of means, about November 15, for providing poor-relief. Mayor H. H. Burton of Cleveland called in vain on his fellow-Republican, Governor Bricker, for succor; Bricker held that the State had provided funds and that it was the business of the municipality to administer them properly. All efforts to impel Bricker to have a special session vote additional State money were useless. According to assertions from the local association of social workers, 16,000 single persons and childless couples were wholly deprived of relief after mid-November, and 40,000 other persons had to subsist at the rate of 5½ cents a meal. Eventually Cleveland, despairing of money from outside, issued \$1,200,000 of its own bonds. Subsistence for the destitute thereupon went back, December 15, to the normal rate.

Cincinnati. In Cincinnati the popular vote at a special election held June 6 rejected a proposal, offered by referendum, to do away with the method of proportional representation, provided by the city charter for the election of members of the City Council. At another election the city's voters authorized an issue of \$5,000,000 of bonds for the cost of works to protect the lower part of the city from a recurrence of the costly flood of 1937. A new Federal Building, costing \$3,000,000 was dedicated on January 14.

State Elections. The chief issue at the elec-

tion held on November 7, a proposal offered by referendum on popular petition, to give old-age pensions to residents reaching the age of 60 years at \$50 and, to couples, \$80 a month, was settled by the overwhelming defeat of the proposal. It had been asserted by opponents that the plan would cost the State \$300,000,000 or more a year; as the taxation of land valued at \$20,000 or more at an additional 2 per cent was proposed as part of the plan, the effect on cities was regarded as likely to be particularly adverse. The movement for the liberalized pensions was conducted by the Rev. Herbert S. Bigelow of Cincinnati, former Democratic Representative in the 75th Congress. Bigelow estimated the cost of the additional payments of pensions at \$60,000,000 a year.

The vote in the referendum (see above) on the civil-service reorganization act was heavily adverse and put the act out of existence.

Officers. Ohio's chief officers, serving in 1939, were: Governor, John W. Bricker (Rep.); Lieutenant-Governor, Paul M. Herbert; Secretary of State, Earl Griffith; Auditor, Joseph T. Ferguson; Treasurer, Don H. Ebright; Attorney-General, Thomas J. Herbert; Director of Education, E. N. Dietrich.

OHIO NORTHERN UNIVERSITY. An institution for the higher education of men and women at Ada, Ohio, founded in 1871, and under the direction of the Methodist Episcopal Church. The enrollment for the fall quarter of 1939 was 776. The 1939 summer quarter had an attendance of 298. The faculty consisted of 47 members. The productive endowment of the institution, as of June 30, 1939, amounted to \$404,807, and the income for 1938-39, to \$190,776. The libraries contained 30,556 volumes. President Robert Williams, D.D., LL.D.

OHIO RIVER. See FLOODS.

OHIO STATE UNIVERSITY. A State institution for the higher education of men and women in Columbus, Ohio, founded in 1870. The enrollment for the autumn of 1939 totaled 13,230, distributed as follows: Graduate School, 1299; agriculture, 1736; arts and sciences, 2641; arts-education, 70; commerce and administration, 2120; dentistry, 208; education, 2213; engineering, 1838; law, 202; medicine, 306; nursing, 82, optometry, 90; pharmacy, 198; veterinary medicine, 227. There were in addition, 5799 students registered in the summer session. The faculty numbered approximately 1000. Endowment amounted to \$1,603,820, total income for the year was \$9,492,984, and total expenditures were \$9,089,627. The library contained 519,125 volumes. Acting President, William McPherson, LL.D.

OHIO UNIVERSITY. A State university for the higher education of men and women, founded at Athens, Ohio, in 1804. The student enrollment for the 1st semester of 1939 was 3551, of whom 210 were in the College of Applied Science, 503 in the College of Arts and Sciences, 498 in the College of Commerce, 576 in the College of Education, 92 in the College of Fine Arts, 99 in the Graduate College, and 1577 in the University College. The enrollment for Extension Division and Correspondence Study courses was approximately 1993. The enrollment for the summer session was 1509. The faculty numbered 247. The amount of endowment and income for the year 1938-39 was endowment, \$85,814; income \$5034. The number of volumes in the library of the university totaled 121,800. President, Herman G. James, Ph.D., J.D., LL.D.

OHIO WESLEYAN UNIVERSITY. An institution for the higher education of men and women in Delaware, O., under the control of the Methodist Episcopal Church, chartered in 1842. For the autumn semester of 1939 the total enrollment was 1426. The faculty numbered 116. The productive endowment of the university amounted to \$3,709,579 and the income for 1938-39 for educational enterprises was \$443,740 and for auxiliary enterprises \$314,329. The library contained 155,170 volumes. President, Herbert John Burgstahler, D.D., LL.D., inducted Oct. 20, 1939. See PRINTS.

OIL. See PETROLEUM.

OKLAHOMA. Area and Population. Area (1930, with later revision to exclude 45 square miles yielded to Texas in a revision of the boundary), 70,012 square miles; included (1930) water, 643 square miles. Population: Apr. 1, 1930 (census), 2,396,040; July 1, 1937 (Federal estimate), 2,548,000; 1920 (census), 2,028,283; Oklahoma City, the capital, had (1930) 185,389 inhabitants; Tulsa, 141,258.

Agriculture. Oklahoma harvested, in 1939, 12,743,000 acres of principal crops. Wheat, on 4,317,000 acres, gave 60,438,000 bu. (\$37,472,000 in estimated value on the farm); cotton, on 1,772,000 acres, 520,000 bales (\$21,060,000); corn, 1,877,000 acres, 27,216,000 bu. (\$16,330,000); oats, 1,242,000 acres, 21,114,000 bu. (\$6,334,000); grain sorghums, 1,200,000 acres, 9,600,000 bu. (\$6,144,000); tame hay, 626,000 acres, 755,000 tons (\$5,662,000); potatoes, 33,000 acres, 2,244,000 bu. (\$1,526,000); barley, 378,000 acres, 6,048,000 bu. (\$2,298,000). The acreage and production of barley quadruple the average for the previous 11 years.

Manufacturing. According to report made in 1939 by the U.S. Census of Manufactures covering the year 1937, totals for Oklahoma (with figures for 1935 in parenthesis) were: Manufacturing establishments in operation, 1428 (1335); wage-earners there employed, 29,551 (24,349); their wages for the year, \$34,390,477 (\$24,520,806); value of manufactured output, \$366,088,721 (\$280,676,215); the part contributed thereto by the processes of manufacture, \$110,618,322 (\$77,417,856). Much the greater part of the manufacturing fell within two classes, that connected with the mineral industries and that engaged in preparing for consumption the products of the farm. In the mineral group, the refining of petroleum attained \$144,474,915 in value of output; the smelting and refining of zinc attained \$13,537,488. In the second group, meat packers' output amounted to \$38,555,703; flour and other products of milling, to \$33,119,822; the output of butter-making establishments, to \$15,149,654; the treatment of cottonseed yielded \$5,661,596 in oil, cake, and meal; the dressing of poultry, making of condensed and evaporated milk, and production of cheese accounted for lesser amounts. Oklahoma City's manufactured output amounted to \$30,767,023; Tulsa's, to \$25,858,174.

Mineral Production. The value of Oklahoma's yearly total production of native minerals for 1937 was \$367,444,222. Of this, petroleum contributed 77 per cent; natural gas and gasoline therefrom, 17 per cent; and zinc the greater part of the remainder. Thereafter the production of petroleum fell sharply to some 174,882,000 barrels for 1938, from 228,839,000 barrels (value, \$283,500,000), the total for 1937. The State's Corporation Commission reduced the daily allowable

production of petroleum from 550,000 barrels as the January average, to 405,000 for June, which was not much raised for the rest of the year. Restrictions thus imposed on production were supported by reduced demand. The production of gasoline amounted, for 1938, to about one-fourth less than that of 1937; the quantity of natural gas delivered to consumers in 1937 was 296,260 million cu. ft., its value \$6,127,000 at the wells and \$32,039,000 after being piped to the users. As much natural gas normally went into the operations in part of the petroleum fields, reduced activity in these carried through into the natural-gas industry. A considerable extension of the Hugoton gas-bearing area of Kansas into Texas County was proved. In 1937, 139 establishments in the State extracted from natural gas 492,290,000 gallons of gasoline, by value, \$20,272,000 at the places where it was produced. The yearly total of zinc in ores mined in the State decreased to 112,924 short tons for 1938, from 135,696 tons (value \$17,640,480) for 1937. Coal mined in Oklahoma totaled about 1,269,000 net tons for 1938 and 1,600,295 tons (value, \$3,841,000) for 1937. A considerable production of lead, largely obtained in ore containing zinc as well, amounted to 29,840 short tons (value, \$3,521,120) for 1937.

Education. Oklahoma's inhabitants of school age (from 6 years to 20, inclusive) were reckoned, for the academic year 1938-39 at 706,547. Enrollments of pupils in public schools numbered 621,295. As stated for the previous year, 1937-38, the latest for which the applicable data were received, enrollments in the elementary group numbered 500,471; in the high schools, 133,772; in other classifications, 507. Expenditures for public-school education in that year included \$32,414,918 for the pay of the 20,405 teachers, averaging \$1588.58.

Legislation. The regular biennial session of the Legislature, meeting in January, worked in agreement with Governor Phillips on a number of points as to which his administration was pledged by the State Democratic platform. In the effort to balance the State's budget, the Legislature had a committee survey the prospective income of the general fund and estimate it, the total thus found being \$21,000,000 a year. Legislation was drawn to require the Highway and the Tax commissions to conform to strict budgetary system. Both these commissions were reorganized; each was made to consist of three members, removable by the Governor. A resolution was voted, asking Congress to halt the Federal work on the construction of the Denison Dam, in the Red River, in view of Oklahoma's doubts lest this undertaking damage its inhabitants. Without recourse to new taxation, the greater part of the Governor's program was carried out. A law enacted to deal with the control of illicit traffic in liquor committed to the Federal agencies the task of protecting Oklahoma from the entry of unauthorized liquor from elsewhere. Quarterly estimates of expenditure for departments, institutions, and school-aid were required.

Political and Other Events. Leon C. Phillips, a country lawyer and an apostle of economy in State affairs, was inaugurated as eleventh Governor of Oklahoma on January 9. Setting forth his policies in an address to the Legislature, he sought to make all the governmental departments keep to a systematic budget; to abolish a number of the State's boards, bureaus and commissions; and to bring about the suspension of the Federal project

of constructing a dam across the Red River at Denison, widely and bitterly opposed in Oklahoma as destined to put some of the State's most fertile lands under water for the benefit of people in Texas. This projected dam, to be put up near Denison, Tex., was to stand at the junction of the Red River, which separates the two States, and the Washita. The State's delegation in Congress later failed to offer effective opposition to the Federal legislation making the initial appropriation for this undertaking. Phillips also sought to better the standing of the State's system of old-age assistance by demanding the resignations of the members of the Oklahoma Public Welfare Commission. By paring the new quarterly estimates of expenditure (see *Legislation*, above), Phillips saved \$1,570,000 in the latter part of 1939.

The State's registration law of 1916 was declared unconstitutional (May 22) by the U.S. Supreme Court on the ground that it made discriminations against Negroes, so strict as to amount to violation of the Fifteenth Amendment. An oil workers' union affiliated with the C.I.O. conducted during the early months of the year a strike against the Mid-Continent Petroleum Corporation; a dozen or more dynamitings of pipe line in the course of this strike were reported.

Officers. Oklahoma's chief officers, serving in 1939, were: Governor, Leon C. Phillips (Dem.); Lieutenant-Governor, James E. Berry; Secretary of State, C. C. Childers; State Auditor, Frank C. Carter; Treasurer, Carl B. Sebring; Attorney-General, Mac Q. Williamson; Superintendent of Public Instruction, A. L. Crable.

OKLAHOMA, UNIVERSITY OF. A State institution for the higher education of men and women in Norman, Okla., founded in 1890. The enrollment for the autumn of 1939 totaled 6935, of whom 4788 were men and 2147 were women. For the summer session of 1939, 2532 students were registered. There were 316 faculty members. The productive funds amounted to \$3,717,347, and the income for 1939-40 was \$3,350,283. The library contained 222,211 volumes. President, William Bennett Bizzell, Ph.D.

OLD-AGE AND SURVIVORS INSURANCE TRUST FUND. See SOCIAL SECURITY BOARD.

OLD-AGE PENSIONS. (For statistics, see under SOCIAL SECURITY BOARD and RELIEF.)

For the great majority of the people of the United States the term old-age pensions continued to signify the payments officially known in the Federal social-security system as old-age assistance. The old-age insurance, distinct from this assistance, and based on the projected accumulation of the required funds through specially assigned taxation, played as yet no considerable part in the function of taking care of the aged poor; it did not form a leading subject of political activity; on the contrary, in the judgment of great numbers of elderly people who had to think of their necessities for few years ahead, old-age insurance had little to offer and old-age assistance alone counted.

Legislation. Congress made important changes in the Federal law, both as to old-age assistance and as to old-age insurance. These changes formed part of the Social Security Act of 1939, passed by the regular session, August 5, and signed by the President on August 11. Thereby the highest allowable monthly payment of old-age assistance made by a State and authorized to be matched by Federal contribution was increased; it had been

\$15 a month and was raised to \$20 a month. The requirement that the Federal monthly contribution should not exceed the State's remained unaltered. Only one State, California, was at the time contributing more, per capita of beneficiaries, than the \$15 set by the older act as the maximum of Federal matching; and California's rate (for June) was \$17.45. Any other State must increase its own rate in order to obtain any advantage from the new Federal provision. A clause that would have raised the Federal contribution toward old-age assistance, if not over a Federal \$15 per beneficiary, to two-thirds of the figure for any individual State, from the actual Federal share of one-half, was taken out of the measure in conference committee, just before final passage. The defeat of this clause, the Connally amendment, dashed the hopes of the less wealthy States to get for their aged dependents an addition of one-half to the monthly pension check without cost to the individual State. The act took pains to keep down the States' demands on the Federal Government by specifying that in the case of the aged poor (and likewise of needy blind folk and children) none should be held qualified for Federal contribution unless in need.

Features of the new act bearing, not on old-age assistance, but on old-age insurance were: provision that the rate of the tax therefor, previously scheduled to rise in 1940, should remain at 1 per cent for the next three years; limitation of the part of an employee's salary subject to the tax to \$3000 at most; advancement of the date for starting payment to aged wives and widows, to child beneficiaries, and to aged dependents to Jan. 1, 1940; qualification of persons entitled to start receiving payments in 1940 because attaining the age of 65 years, by letting them become recipients if attaining that age at any time in the course of that year; extension of the group covered by old-age insurance (and by unemployment compensation also), to include part of the labor previously excluded as agricultural—that part not actually working on farms—and part of that previously left out as domestic, as well as seamen. The postponement of the higher tax and the other liberalities as to old-age insurance were expected to add very considerably to the cost that the Treasury would have to bear in years soon to come. By way of offset it was alleged that the cost over a long term would not be greatly affected. There remained none the less the impression, traceable in the press at the time, that old-age insurance had been made more generous in the endeavor to pacify a rising popular appetite for ample provision for the elderly poor at public expense.

Affecting both old-age assistance and old-age pensions, a provision of the Social Security Act required that a State agency administering any part of social security must regulate the selection and tenure of its employees by means of a civil-service or merit system.

For States' old-age assistance laws see TEXAS and LABOR LEGISLATION.

States' Troubles over Pensions. The States particularly afflicted with difficulties over their payments of old-age assistance in the course of 1939 might be grouped in three divisions: those where agitation for exorbitantly high public support for the old folk threatened to have its way, as in California and in Ohio; those in which expensive pensions, already fastened on the government by popular vote, hindered the State finances,

as notably in Texas and in Colorado; and those where either inadequate State administration or else antagonism between the Federal and State administrations had caused the Social Security Board to withhold payment of its share of the pension money, as in the case of Ohio.

Two High-Pension Agitations. For details of the campaigns to set up, by referendum of the people, payments far in excess of the rate of existing old-age assistance, see CALIFORNIA and OHIO. The course of the agitations in these two States will bear a comparison. Both simultaneously went through several months of political stress and economical uncertainty, facing formidable movements to fasten upon them the public duty to pay old-age pensions at rates above all American experience in public support. The outcome in the two cases was much the same, for the popular vote in each State rejected the pension proposal, though Ohio's rejection was more emphatic. The movement centered in each case in one populous city, Los Angeles playing the part in California that Cincinnati played in Ohio. Both States were above the average in the number of the population, in the percentage of native whites of native parentage, and in their school statistics. For such reasons as these the strength of the pension-boosting movements in both was regarded with the more apprehension elsewhere, particularly in view of the unsoundness which was widely believed to characterize the proposals that were offered.

There appeared great dissimilarity between the two cases in some other respects. In the matter of the proposed ways for raising the means to pay old people out of the public purse, incomes of well over the usual rates, the Californian and Ohioan agitations agreed in offering familiar but generally rejected plans; yet the respective plans bore no other similarity. That of the Californian movement proposed a modification of the self-paying warrant, to which stamps at 2 per cent of face value must be pasted every week for a year, a plan lately tried without success in the Canadian Province of Alberta and rejected in somewhat different form in California at the election of 1938. That of Ohio called for the imposition of a specially assigned tax on incomes and for an additional tax, at 2 per cent, on land valued above \$20,000 an acre. Opponents represented the latter tax as a partial application of Henry George's principle of the single tax on land. It may be noted that the Ohio plan asked for less in public support than did the proposal used in California. In Ohio all persons over 60 years of age were to get \$50 a month, except man and wife, who would receive \$40 apiece; while in California, every resident over the age of 50 was to have \$30 a week. Ohio proved the less fertile ground for agitation, as it rejected the milder proposal by a much more emphatic majority of the popular vote. The vote—adverse by two to one in California and three to one in Ohio—was in neither case close enough to warrant conservatives' alarm; yet it revealed a big enough body of opinion, in either State, to invite further attention from politicians and, equally, to bring home to others the fact that the elder age-groups were gaining over the population as a whole and must be taken into account more attentively as a political factor.

High Pensions and Low Payments. Details of the handling of pensions in Colorado and the failure to appropriate for paying more and

higher pensions in Texas will be found in the articles on these States. The two cases differed widely, in that Texas had but begun its experience with endeavors to enforce or evade a liberalization of grants to the aged, while Colorado had worked on the problem for two prior years. Again, Colorado owed its existing system of grants for the aged to the voters' having put this system in the State constitution at the polls, while Texas, at the outset of 1939 faced only a demand for more aid to the elderly, expressed in the big vote won by Governor O'Daniel, who had advocated the change. This evidence of popular feeling sufficed to impel the Legislature to pass a measure making the grants to old people more generous, but did not inspire agreement on any plan for raising the money that this would require. See **TAXATION**.

OLIPHANT, HERMAN. An American lawyer and economist, died in Washington, D. C., Jan. 11, 1939. Born in Forest, Ind., Aug. 31, 1884, he was educated at Marion College (A.B., 1907), the University of Indiana (A.B., 1909), and the University of Chicago (J.D., 1914). Upon graduation from Marion he joined its faculty as an instructor in English, serving until 1911. After obtaining his law degree, he became associated with the University of Chicago Law School as an instructor (1914-15), assistant professor (1915-16), associate professor (1916-19), and professor (1919-21). He transferred to Columbia University in 1921 as professor of law, and in 1929 joined the faculty of the newly-formed Institute of Law at Johns Hopkins University of which he was one of the organizers.

Long a champion of liberal policies—he was counsel for the Amalgamated Association of Street & Electric Railway Employees in its fight against the Interborough Rapid Transit Co., New York, in 1926—he joined the Farm Credit Administration as general counsel, in March, 1933. In November, he moved to the Treasury Department with Henry Morgenthau, Jr., and in 1934 was appointed general counsel to the Department of the Treasury. Mr. Oliphant was one of the important fiscal advisers of the Roosevelt Administration and was considered the brain father of the undistributed corporate profits tax. Among his many recommendations were the devaluation of the dollar, the purchase of silver, and the revolving stabilization fund. He drafted much of the New Deal legislation looking toward a broader distribution of wealth and assisted in planning legislation for the control of the country's securities markets. Also, he helped plan the monopoly investigation at which he represented the Treasury.

During the World War, Oliphant served as an assistant director of War Trade Intelligence (1917-18) and as an assistant director of the industrial relations division of the Emergency Fleet Corporation (1918-19). Active in legal organizations, he was president of the American Association of Law Schools in 1927.

OMAN. See under **ARABIA**.

ONTARIO, 6n-tār'i-6. A province of Canada. Area, 412,582 square miles; population (1939 estimate), 3,752,000 compared with 3,431,683 (1931 census). The Indian population was 30,631 in 1934.

During the year 1938 there were 65,501 births (17.6 per 1000); 36,879 deaths (9.9 per 1000); and 30,089 marriages (8.1 per 1000). Chief cities (with 1931 population figures in parentheses):

Toronto, the capital (631,207); Hamilton (155,547); Ottawa, Dominion capital, (126,872); London (71,148); Windsor (63,108); Kitchener (30,793); Brantford (30,107); Fort William (26,277); St. Catharines (24,753); Kingston (23,439); Oshawa (23,439). In 1937 there were 765,974 students enrolled in the schools, including 38,751 students in the colleges and universities. Ontario has five universities (Toronto, Queen's, Western Ontario, McMaster, and Ottawa), an agricultural college at Guelph, and the Royal Military College at Kingston (maintained by the Dominion government).

Production. The estimated gross value of agricultural production in 1938 was \$327,529,000 (\$343,137,000 in 1937), of which field crops accounted for \$127,810,000. Other items were: Dairy products, \$89,153,000; farm animals, \$51,095,000; poultry products, \$22,329,000; tobacco, \$18,293,000; fruits and vegetables, \$13,469,000. Livestock (1939): 559,500 horses; 2,488,000 cattle, including milch cows; 846,900 sheep; 1,546,100 swine; 21,618,200 hens and chickens. Fur production for the year ended June 30, 1937, totaled 683,941 pelts valued at \$2,987,713. The 1937 output of the forests equaled 629,826 M cu. ft. valued at \$37,668,861. The fish catch in 1938 was estimated at \$2,850,500.

Mineral production (1938) totaled \$219,801,994, of which gold (2,896,477 fine oz.) represented \$101,883,578; nickel (210,572,738 lb.), \$53,914,494; copper (309,030,106 lb.), \$30,405,500; platinum (161,310 fine oz.), \$5,196,279; natural gas (10,952,806 M cu. ft.), \$6,460,764; silver (4,318,837 fine oz.), \$1,877,701; palladium, rhodium, iridium, etc. (130,893 fine oz.), \$3,677,342; salt (388,130 tons), \$1,637,140. In 1937, from the 9796 manufacturing plants, with a total of 321,743 workers, the net value of products was \$802,403,114.

Government. For the year ended Mar. 31, 1940, revenue was estimated at \$98,456,000, and expenditure at \$102,900,929. Budget (1940-41): Ordinary revenue, \$89,051,209; expenditure, \$88,694,970. The government is vested in a lieutenant-governor who is advised by an executive council of 10 members who also are members of the legislative assembly of 90 members elected for a term of five years by popular vote of the people. Ontario is represented in the Dominion parliament at Ottawa by 24 members in the Senate and 82 members in the House of Commons. Lieutenant-Governor, Albert Matthews (appointed Nov. 30, 1937); Premier, Mitchell F. Hepburn (Liberal). See **CANADA** under *History*.

OPIUM. See **NARCOTICS CONTROL**.

ORANGE FREE STATE. See **SOUTH AFRICA, UNION OF**.

ORANGES. See **HORTICULTURE**.

ORCHESTRAS. See **MUSIC; RADIO PROGRAMS**.

ORE DRESSING. See **METALLURGY**.

OREGON. Area and Population. Area, 96,699 square miles; included (1930) water, 1092 square miles. Population: Apr. 1, 1930 (census), 953,786; July 1, 1937 (Federal estimate), 1,027,000; 1920 (census), 783,389. Portland had (1930) 301,815 inhabitants; Salem, the capital, 26,266.

Agriculture. Oregon harvested, in 1939, 2,534,900 acres of the principal crops. Hay, wheat, and fruits of the orchard normally furnished the main returns on culture of the soil. In 1939 tame hay, on 824,000 acres, made 1,476,000 tons (\$12,103,000, estimated farm value); wheat, on 775,000

acres, 16,818,000 bu. (\$11,268,000); apples gathered for market, 2,000,000 bu. (\$1,400,000); pears, 4,229,000 bu. (\$2,399,000). Other crops included potatoes, 45,000 acres, 7,200,000 bu. (\$4,680,000); oats, 350,000 acres, 11,725,000 bu. (\$4,221,000); barley, 177,000 acres, 5,222,000 bu. (\$2,507,000); hops, 19,300 acres, 19,300,000 lb. (\$4,383,000).

Manufacturing. According to report made in 1939 by the U.S. Census of Manufactures covering 1937, totals for Oregon (with figures for 1935 in parenthesis) were: Establishments engaged in manufacturing, 2107 (1710); their wage-earning employees, 65,982 (51,006); wages paid, \$79,492,397 (\$51,414,772); value of manufactured products, \$363,142,053 (\$259,344,694); part of this value contributed by processes of manufacture, \$169,056,912 (\$113,946,581). The chief industry, the manufacture of lumber and timber products, occupied 36,040 wage-earners in 1937 and brought them in wages \$45,456,652; it produced \$127,760,857 in goods; while the planing-mill industry, separately classified, produced \$7,884,227 and the production of pulp, separate also, and chiefly made from wood, attained \$8,654,225. From pulp, in turn, was made paper to the value of \$16,643,999. Much of the rest of the total of manufactured goods was covered by the output of preparations from products of the farm. Thus was produced \$24,212,542 in canned goods and other preparations of fruits and vegetables; the output of flour and other products of grain mills amounted to \$19,138,231; that of meat-packing, to \$17,255,182; factories' production of butter totaled \$10,972,515; separately listed were the production of cheese, \$3,509,767; and of condensed and evaporated milk, \$2,140,435. Dependent on the fisheries, factories canned and cured fish, crabs, shrimps, and molluscs, producing \$4,333,913. Portland's production of manufactured goods totaled \$123,795,111. Salem's, \$15,740,729.

Mineral Production. The yearly production of gold in Oregon rose to about 91,100 ounces for 1939, from 81,729 for 1938; by value, to \$3,188,500, from \$2,860,515. Minor production of silver, copper, and lead brought the aggregate value of the yearly production of the four metals—gold, silver, copper, and lead—to \$3,268,134 for 1939 and to \$2,935,053 for 1938.

Education. For the academic year 1938-39 Oregon's inhabitants of school age (from 4 years to 19, inclusive) were reported to number 270,397. Enrollments of pupils in the public schools totaled 207,546; this comprised 144,794 in elementary study and 62,752 in high schools. Additional enrollments outside of the foregoing groups numbered 11,673. The year's expenditure for public-school education amounted to \$18,885,990, of which the greater part represented the salaries of the 7887 teachers, averaging \$1304.

Legislation. The regular session of the Legislature, meeting in January, found little to do in the field of industrial regulation, for the popular vote, Nov. 8, 1938, adopted a law brought before people by initiative petition; this measure, the Anti-Picketing law, prohibited pickets' obstructing the lawful processes in the economic course of agricultural or other products; made non-obstructive picketing likewise unlawful except in the case of a "bona-fide, existing labor dispute" between employer and employees; forbade boycotts; forbade collecting union dues in excess of the union's "legitimate requirements"; required the labor or-

ganization to keep accounts of its receipts and expenditures for members' inspection; prohibited hindering or molesting employees; and made violations punishable as misdemeanors.

To strengthen the enforcement of the law of 1938, the Legislature in 1939 conferred on the State's circuit courts the power to issue the necessary injunctions and other orders. The State's income-tax law was revised.

Political and Other Events. Cascade Locks, a town a short way upstream from the Federal Government's Bonneville Dam, voted to buy and operate municipally the local electrical lines of the West Coast Power Company and became, at the beginning of August, the first regular purchaser of electric current from the Federal development on the Columbia. See **HORTICULTURE**.

Labor organizations agreed in condemning the strict law passed by the Legislature to regulate the relations of unions and employers; they did not attempt to resort to any general outbreak of strikes in opposition to the new act, but started proceedings to test the constitutionality of its provisions. However, the chief counsel of the A. F. of L. was reported (August 30) as advising the unions of the group in Oregon to "ignore and defy" the State's "anti-labor" law. Governor Martin declared, November 15, that only a few small strikes had occurred under the new law and that the State now had "industrial peace."

Officers. Oregon's chief officers, serving in 1939, were: Governor, Charles A. Sprague (Rep.); Secretary of State and Auditor, Earl Snell; Treasurer, W. E. Pearson; Attorney-General, I. H. Van Winkle; Commissioner of Labor, C. H. Gram; Superintendent of Public Instruction, Rex Putnam.

OREGON, UNIVERSITY OF. A coeducational institution under State control and support at Eugene, founded in 1872. The total enrollment for the fall term of 1939 was 3610. The attendance at the 1939 summer sessions was 954. The instructional staff for the fall term numbered 274. The total income for the year ending June 30, 1939, was \$972,044, exclusive of gifts. The library contained 296,318 volumes. A new building, Chapman Hall, was completed in 1939. President, Donald M. Erb, Ph.D.

OREGON STATE COLLEGE. The Federal land-grant college of Oregon, established under Federal and State support at Corvallis in 1868. Oregon State College is one of the six institutions constituting the Oregon State System of Higher Education. In the reorganization of Oregon higher education, inaugurated in 1932, the State College has been made the center of science, and of the professional and technical schools based upon the natural sciences. The enrollment for the autumn term of 1939 was 4632. The 1939 summer-session enrollment was 987. There were 347 members on the resident teaching faculty. Income is from millage levy plus varying supplemental appropriations. The library contained 166,687 catalogued volumes. During the fall of 1939 various improvements were made in campus walks, landscaping, and drainage under WPA projects. A new chemistry building was completed costing \$425,000; a new agricultural engineering building, \$65,000; and a \$75,000 remodeling of the old chemistry building into a class A education building. President, George Wilcox Peavy, M.S.F., Sc.D., LL.D.

ORGANIC COMPOUNDS. See **CHEMISTRY**.

ORGANIZED RESERVES. See **MILITARY PROGRESS.**

ORT, WOMEN'S AMERICAN. A Jewish society organized in America in 1927 for constructive relief for victims of war, persecution and economic maladjustment. It is an autonomous group functioning in conjunction with the American ORT Federation.

The name ORT is derived from the initial letters of three Russian words meaning Organization for the Promotion of Industrial Trades and Agriculture. The ORT was founded in Russia in 1880. Since the World War it has become an international organization. Its chief function today is the rehabilitation, vocational guidance and training of refugees. This is accomplished in a network of autonomous school systems, co-operatives, workshops and training farms distributed throughout Europe. Present operations centre in France, England, Germany, Switzerland, Poland, Rumania, Lithuania, Latvia, Bulgaria, and Hungary. This work is supported by volunteer groups and whole communities in these countries as well as in North, South, and Central America, and Africa.

ORT's programme in 1939 was somewhat revised in accordance with the demands of war. Working in co-operation with various governments, ORT continued to support technical training schools for children and adults of both sexes, industrial and agricultural co-operatives, and to provide funds for the purchase of tools, machinery, agricultural implements, seeds, and livestock. While refugee work in cities, in ORT colonies, and in training camps was the paramount function, a variety of other kinds of projects was included in the programme. Courses to improve the skill of artisans in countries where there is anti-Semitic vocational discrimination were maintained. One hundred and five boys and instructors from the Berlin ORT School were transferred to England. A number of members of the Women's American ORT continued to finance the education of orphans in Eastern Europe through the ORT Guardianship Plan.

The Women's American ORT has 34 chapters in the United States and Canada. The Paris headquarters of the World ORT Union were transferred to Vichy, France, when evacuation of the capital was decreed. The national headquarters of the American ORT Federation and of the Women's American ORT are at 212 Fifth Avenue, New York City.

ORTHODONTIA. See **DENTISTRY.**

O'SHAUGHNESSY DAM. See **DAMS.**

O'SHEA, WILLIAM J (AMES). An American educator, died in New York, Jan. 16, 1939, where he was born, Oct. 10, 1863. Educated at the College of the City of New York (B.S., 1887) and Manhattan College (M.S., 1889), he studied medicine for a short time, but turned to education and was appointed a teacher in the New York Public Schools in 1887. In 1901 he was appointed principal of P.S. 171, a new school. From district superintendent in 1906, he was promoted to associate superintendent in 1918. Mayor Hylan appointed him superintendent of schools on May 1, 1924, and he served until Feb. 1, 1934, retiring upon the expiration of his term of office.

Dr. O'Shea campaigned for the improvement of the teachers' pension system and was in charge of all war and war relief activities in the schools during the World War, including the Liberty Loan, Red Cross, War Saving, and Thrift Stamp

drives. In 1907 and in 1916 he was chairman of the membership committee of the National Education Association. He was the author of *Common Words in Easy Sentences.*

OSLO POWERS. The signatories of the Oslo Convention of 1931 for the mutual reduction of international trade barriers. These powers (Belgium, Luxembourg, Denmark, Finland, The Netherlands, Norway, and Sweden) subsequently co-operated to an extent in economic matters and in defense of their neutrality. See **BELGIUM** and the other countries under *History* for developments in 1939.

OUTER MONGOLIA. See **MONGOLIA.**

PACIFIC RELATIONS, INSTITUTE OF. An organization formed in Honolulu in 1925 as an unofficial body for the study of the peoples of the Pacific and their mutual relations. It is governed by a Pacific Council composed of representatives of member national councils in Australia, Canada, China, France, Great Britain, Japan, the Netherlands and Netherlands Indies, New Zealand, the Philippines, the Union of Soviet Socialist Republics, and the United States. In addition to carrying on a regular international conference and research program covering such subjects as land utilization, population, migration, economic development, trade, colonial problems, cultural relations, and diplomatic relations, the Institute is conducting an Inquiry into the background of the present Sino-Japanese conflict. Offices of the International Secretariat are at 129 East 52nd St., New York City.

The American Council, in addition to its participation in the international program, carries on its own extensive research and educational activities. Research projects under way, and shortly to be published, treat such questions as American shipping in the Pacific, American rights and interests in China as affected by the Sino-Japanese conflict, Far Eastern news in the American press, narcotic drugs in the Far East and their repercussions in the Occident, protection of coastal fisheries under international law, and similar topics. Appearing in its publication series, "Studies of the Pacific," are "American Far Eastern Policy and the Sino-Japanese War," edited by Miriam S. Farley, "Rural Australia and New Zealand," by Edmund deS. Brunner, "North Pacific Fisheries," an economic survey by Homer E. Gregory and Kathleen Barnes, "Fijian Frontier," by Laura Thompson, and "Shanghai and Tientsin," an analysis of the problems of these foreign concessions in China. Other new publications include three pamphlets, "America Holds the Balance in the Far East," by Robert W. Barnett, "Deadlock In China," by Lawrence K. Rosinger, and "Our Far Eastern Record: A Reference Digest on American Policy"; "Films of the Pacific Area," an annotated bibliography, and other reading lists; "Propaganda from China and Japan," by Bruno Lasker and Agnes Roman, a case study, and a series of textbooks on "Peoples of the Pacific."

As part of its educational program, the American Council has arranged a series of private round table conferences throughout the country on American Far Eastern policy and the Sino-Japanese war with the aim of aiding the development of an informed and intelligent public opinion on foreign policy. Experimental language schools in Chinese and Russian have been developed to facilitate the acquisition of these language tools by American scholars. The Council has also participated in the editing of educational material in connection with the release of educational motion pictures on Pa-

cific subjects, taken part in radio and conference programs, published reading lists and bibliographies, provided library facilities for students and writers, sent out bibliographical exhibits and news releases for news and editorial use, and engaged in a variety of activities aimed at stimulating interest in and research on the problems of the Pacific area.

Its fortnightly journal, *Far Eastern Survey*, covers significant economic developments in the Far East, and more especially at the present time the economic aspects of the Sino-Japanese war and American policy in relation to that war.

The officers of the American Council of the Institute of Pacific Relations are Dr. Philip C. Jessup, chairman, Francis S. Harmon, treasurer, and Frederick V. Field, secretary. It maintains offices at 129 East 52nd St., New York, 1795 California St., San Francisco, and 517 Dillingham Building, Honolulu.

PACIFISM. See **PEACE MOVEMENT.**

PADDOCK. THE RT. REV. ROBERT LEWIS. An American Protestant Episcopal Bishop, died in Brooklyn, N. Y., May 17, 1939. Born in New York, Dec. 24, 1869, he was educated at Trinity College (A.B., 1894; A.M., 1897) and the Berkeley Divinity School, from which, upon graduation in 1897, he was sent to Southington, Conn., in charge of a mission. In the fall of that year he was assigned as an assistant at St. Paul's Church in Cleveland and as general secretary of the Church Students' Missionary Association there.

Ordained a priest in 1898 he was made vicar of the Pro-Cathedral and canon of the Cathedral of St. John the Divine in New York, where he remained until 1902 when he was appointed rector of the Church of the Holy Apostles. He became interested in civic and social reform movements in the City and established Chelsea House, a self-supporting home for young women, and other organizations. On Dec. 18, 1907, he was consecrated bishop of Eastern Oregon and he retired, under criticism of his missionary methods, in September, 1922, after a breakdown in health. He retained the rank of Bishop with one vote in the House of Bishops.

After his retirement, Bishop Paddock took an active part in the work of the Church League for Industrial Democracy, the American Civil Liberties Union, and similar organizations, and was one of the organizers, and chairman, of the American Friends of Spanish Democracy which worked on behalf of the Loyalist cause during the Spanish Civil War.

PAHANG. See **FEDERATED MALAY STATES.**

PAINTING. The status of painting in the United States altered little in 1939 from that of preceding years, although the volume of production increased. An effort to transcribe the American scene and so find nationalistic expression was pronounced, and there was increasing evidence of influence exerted by the works of French modernists. With neither public nor critics did the comprehensive exhibitions of contemporary American painting, held in connection with the two World's Fairs, find favor, for the excellent reasons that subjectively the works shown were dreary, if not vulgar, and technically they failed to uphold a creditable standard.

Never before in the history of art was there such demand for mural paintings as that created in 1939 by U.S. Federal agencies. The Division of Fine Arts, Public Buildings Administration, conducted eighteen competitions for mural paintings

to be placed in new Federal buildings, each of which was judged by a specially appointed committee of experts, and paid for by allocation of a percentage of the amount appropriated for construction. Under this Division, 255 commissions for mural paintings were completed, 226 reported under-way, and 200 in process of designing in 1939. In addition to this, under the WPA Federal Art Project, primarily a relief measure, 1400 mural paintings were produced and assigned to tax-supported institutions. Most important of the competitions held by the Division of Fine Arts, P.B.A., were those for a series of panels for the post office at St. Louis, Missouri, and for 48 murals to be placed in 48 post offices—one in each state of the Union. These competitions were anonymous, and nation-wide rather than regional.

Outstanding for merit were the mural paintings by Ezra Winter for one of the reading rooms in the Library of Congress Annex which were completed in the early summer. These illustrate the Canterbury Pilgrims as described in the Prologue of Chaucer's *Canterbury Tales*—a procession of 32 figures (life-size) on horseback; a pageant running the length of the two side walls, a distance of 120 feet, with smaller related panels on the end walls.

Also of superior merit was a series of mural paintings by Thornton Oakley for the auditorium of the Franklin Institute, Philadelphia (completed in September), which depict epochs in science as represented by eminent men of the past—astronomers, mathematicians, and others.

Mention should also be made of a series of historic mural paintings by Barry Faulkner for the new State Capitol at Salem, Oregon, likewise completed in 1939; and to the unique mural decorations of the new lecture hall of the Carnegie Institution in Washington (opened late in 1938), designed by J. Monroe Hewlett. All of these outstanding works were obtained through direct commission rather than competition. An effort to use mural paintings on the exteriors of buildings at the two World Fairs was made but without advancing the art.

The number of easel paintings produced during this same year was even greater than that of murals. The WPA Federal Art Project alone reported 50,500 completed under its aegis, to which must be added paintings by self-supported professional artists—of whom there are six or seven thousand—in all parts of the country, which, with a minimum normal credit of ten paintings each would more than double this gigantic figure.

Notwithstanding the discouraging financial outlook, the registration of students in art schools throughout the country greatly increased in 1939, as did the number of summer schools of painting. Also, more requests were made of the WPA Federal Art Project by groups in various parts of the country, for teachers of art than could possibly be supplied.

Of the eight prizes awarded in connection with the Carnegie Institute's International Exhibition, five, in 1939, went to American artists. The first of these, \$1000, went to Alexander Brook for a painting entitled "Georgia Jungle," later purchased for the Institute's permanent collection.

The refusal by the jury for the Biennial Exhibition at the Corcoran Gallery of Art of Peter Blume's surrealist painting, "The Eternal City"—an attack on Fascism, depicting Mussolini as a jack-in-the-box in the Roman Forum—aroused vigorous protest from representatives of the

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ORT, WOMEN'S AMERICAN. A Jewish society organized in America in 1927 for constructive relief for victims of war, persecution and economic maladjustment. It is an autonomous group functioning in conjunction with the American ORT Federation.

The name ORT is derived from the initial letters of three Russian words meaning Organization for the Promotion of Industrial Trades and Agriculture. The ORT was founded in Russia in 1880. Since the World War it has become an international organization. Its chief function today is the rehabilitation, vocational guidance and training of refugees. This is accomplished in a network of autonomous school systems, co-operatives, workshops and training farms distributed throughout Europe. Present operations centre in France, England, Germany, Switzerland, Poland, Rumania, Lithuania, Latvia, Bulgaria, and Hungary. This work is supported by volunteer groups and whole communities in these countries as well as in North, South, and Central America, and Africa.

ORT's programme in 1939 was somewhat revised in accordance with the demands of war. Working in co-operation with various governments, ORT continued to support technical training schools for children and adults of both sexes, industrial and agricultural co-operatives, and to provide funds for the purchase of tools, machinery, agricultural implements, seeds, and livestock. While refugee work in cities, in ORT colonies, and in training camps was the paramount function, a variety of other kinds of projects was included in the programme. Courses to improve the skill of artisans in countries where there is anti-Semitic vocational discrimination were maintained. One hundred and five boys and instructors from the Berlin ORT School were transferred to England. A number of members of the Women's American ORT continued to finance the education of orphans in Eastern Europe through the ORT Guardianship Plan.

The Women's American ORT has 34 chapters in the United States and Canada. The Paris headquarters of the World ORT Union were transferred to Vichy, France, when evacuation of the capital was decreed. The national headquarters of the American ORT Federation and of the Women's American ORT are at 212 Fifth Avenue, New York City.

ORTHODONTIA. See **DENTISTRY.**

O'SHAUGHNESSY DAM. See **DAMS.**

O'SHEA, WILLIAM J (AMES). An American educator, died in New York, Jan. 16, 1939, where he was born, Oct. 10, 1863. Educated at the College of the City of New York (B.S., 1887) and Manhattan College (M.S., 1889), he studied medicine for a short time, but turned to education and was appointed a teacher in the New York Public Schools in 1887. In 1901 he was appointed principal of P.S. 171, a new school. From district superintendent in 1906, he was promoted to associate superintendent in 1918. Mayor Hylan appointed him superintendent of schools on May 1, 1924, and he served until Feb. 1, 1934, retiring upon the expiration of his term of office.

Dr. O'Shea campaigned for the improvement of the teachers' pension system and was in charge of all war and war relief activities in the schools during the World War, including the Liberty Loan, Red Cross, War Saving, and Thrift Stamp

drives. In 1907 and in 1916 he was chairman of the membership committee of the National Education Association. He was the author of *Common Words in Easy Sentences*.

OSLO POWERS. The signatories of the Oslo Convention of 1931 for the mutual reduction of international trade barriers. These powers (Belgium, Luxembourg, Denmark, Finland, The Netherlands, Norway, and Sweden) subsequently co-operated to an extent in economic matters and in defense of their neutrality. See **BELGIUM** and the other countries under *History* for developments in 1939.

OUTER MONGOLIA. See **MONGOLIA.**

PACIFIC RELATIONS, INSTITUTE OF. An organization formed in Honolulu in 1925 as an unofficial body for the study of the peoples of the Pacific and their mutual relations. It is governed by a Pacific Council composed of representatives of member national councils in Australia, Canada, China, France, Great Britain, Japan, the Netherlands and Netherlands Indies, New Zealand, the Philippines, the Union of Soviet Socialist Republics, and the United States. In addition to carrying on a regular international conference and research program covering such subjects as land utilization, population, migration, economic development, trade, colonial problems, cultural relations, and diplomatic relations, the Institute is conducting an Inquiry into the background of the present Sino-Japanese conflict. Offices of the International Secretariat are at 129 East 52nd St., New York City.

The American Council, in addition to its participation in the international program, carries on its own extensive research and educational activities. Research projects under way, and shortly to be published, treat such questions as American shipping in the Pacific, American rights and interests in China as affected by the Sino-Japanese conflict, Far Eastern news in the American press, narcotic drugs in the Far East and their repercussions in the Occident, protection of coastal fisheries under international law, and similar topics. Appearing in its publication series, "Studies of the Pacific," are "American Far Eastern Policy and the Sino-Japanese War," edited by Miriam S. Farley, "Rural Australia and New Zealand," by Edmund deS. Brunner, "North Pacific Fisheries," an economic survey by Homer E. Gregory and Kathleen Barnes, "Fijian Frontier," by Laura Thompson, and "Shanghai and Tientsin," an analysis of the problems of these foreign concessions in China. Other new publications include three pamphlets, "America Holds the Balance in the Far East," by Robert W. Barnett, "Deadlock in China," by Lawrence K. Rosinger, and "Our Far Eastern Record: A Reference Digest on American Policy"; "Films of the Pacific Area," an annotated bibliography, and other reading lists; "Propaganda from China and Japan," by Bruno Lasker and Agnes Roman, a case study, and a series of textbooks on "Peoples of the Pacific."

As part of its educational program, the American Council has arranged a series of private round table conferences throughout the country on American Far Eastern policy and the Sino-Japanese war with the aim of aiding the development of an informed and intelligent public opinion on foreign policy. Experimental language schools in Chinese and Russian have been developed to facilitate the acquisition of these language tools by American scholars. The Council has also participated in the editing of educational material in connection with the release of educational motion pictures on Pa-

cific subjects, taken part in radio and conference programs, published reading lists and bibliographies, provided library facilities for students and writers, sent out bibliographical exhibits and news releases for news and editorial use, and engaged in a variety of activities aimed at stimulating interest in and research on the problems of the Pacific area.

Its fortnightly journal, *Far Eastern Survey*, covers significant economic developments in the Far East, and more especially at the present time the economic aspects of the Sino-Japanese war and American policy in relation to that war.

The officers of the American Council of the Institute of Pacific Relations are Dr. Philip C. Jessup, chairman, Francis S. Harmon, treasurer, and Frederick V. Field, secretary. It maintains offices at 129 East 52nd St., New York, 1795 California St., San Francisco, and 517 Dillingham Building, Honolulu.

PACIFISM. See **PEACE MOVEMENT.**

PADDOCK, THE RT. REV. ROBERT LEWIS. An American Protestant Episcopal Bishop, died in Brooklyn, N. Y., May 17, 1939. Born in New York, Dec. 24, 1869, he was educated at Trinity College (A.B., 1894; A.M., 1897) and the Berkeley Divinity School, from which, upon graduation in 1897, he was sent to Southington, Conn., in charge of a mission. In the fall of that year he was assigned as an assistant at St. Paul's Church in Cleveland and as general secretary of the Church Students' Missionary Association there.

Ordained a priest in 1898 he was made vicar of the Pro-Cathedral and canon of the Cathedral of St. John the Divine in New York, where he remained until 1902 when he was appointed rector of the Church of the Holy Apostles. He became interested in civic and social reform movements in the City and established Chelsea House, a self-supporting home for young women, and other organizations. On Dec. 18, 1907, he was consecrated bishop of Eastern Oregon and he retired, under criticism of his missionary methods, in September, 1922, after a breakdown in health. He retained the rank of Bishop with one vote in the House of Bishops.

After his retirement, Bishop Paddock took an active part in the work of the Church League for Industrial Democracy, the American Civil Liberties Union, and similar organizations, and was one of the organizers, and chairman, of the American Friends of Spanish Democracy which worked on behalf of the Loyalist cause during the Spanish Civil War.

PAHANG. See **FEDERATED MALAY STATES.**

PAINTING. The status of painting in the United States altered little in 1939 from that of preceding years, although the volume of production increased. An effort to transcribe the American scene and so find nationalistic expression was pronounced, and there was increasing evidence of influence exerted by the works of French modernists. With neither public nor critics did the comprehensive exhibitions of contemporary American painting, held in connection with the two World's Fairs, find favor, for the excellent reasons that subjectively the works shown were dreary, if not vulgar, and technically they failed to uphold a creditable standard.

Never before in the history of art was there such demand for mural paintings as that created in 1939 by U.S. Federal agencies. The Division of Fine Arts, Public Buildings Administration, conducted eighteen competitions for mural paintings

to be placed in new Federal buildings, each of which was judged by a specially appointed committee of experts, and paid for by allocation of a percentage of the amount appropriated for construction. Under this Division, 255 commissions for mural paintings were completed, 226 reported under-way, and 200 in process of designing in 1939. In addition to this, under the WPA Federal Art Project, primarily a relief measure, 1400 mural paintings were produced and assigned to tax-supported institutions. Most important of the competitions held by the Division of Fine Arts, P.B.A., were those for a series of panels for the post office at St. Louis, Missouri, and for 48 murals to be placed in 48 post offices—one in each state of the Union. These competitions were anonymous, and nation-wide rather than regional.

Outstanding for merit were the mural paintings by Ezra Winter for one of the reading rooms in the Library of Congress Annex which were completed in the early summer. These illustrate the Canterbury Pilgrims as described in the Prologue of Chaucer's *Canterbury Tales*—a procession of 32 figures (life-size) on horseback; a pageant running the length of the two side walls, a distance of 120 feet, with smaller related panels on the end walls.

Also of superior merit was a series of mural paintings by Thornton Oakley for the auditorium of the Franklin Institute, Philadelphia (completed in September), which depict epochs in science as represented by eminent men of the past—astronomers, mathematicians, and others.

Mention should also be made of a series of historic mural paintings by Barry Faulkner for the new State Capitol at Salem, Oregon, likewise completed in 1939; and to the unique mural decorations of the new lecture hall of the Carnegie Institution in Washington (opened late in 1938), designed by J. Monroe Hewlett. All of these outstanding works were obtained through direct commission rather than competition. An effort to use mural paintings on the exteriors of buildings at the two World Fairs was made but without advancing the art.

The number of easel paintings produced during this same year was even greater than that of murals. The WPA Federal Art Project alone reported 50,500 completed under its aegis, to which must be added paintings by self-supported professional artists—of whom there are six or seven thousand—in all parts of the country, which, with a minimum normal credit of ten paintings each would more than double this gigantic figure.

Notwithstanding the discouraging financial outlook, the registration of students in art schools throughout the country greatly increased in 1939, as did the number of summer schools of painting. Also, more requests were made of the WPA Federal Art Project by groups in various parts of the country, for teachers of art than could possibly be supplied.

Of the eight prizes awarded in connection with the Carnegie Institute's International Exhibition, five, in 1939, went to American artists. The first of these, \$1000, went to Alexander Brook for a painting entitled "Georgia Jungle," later purchased for the Institute's permanent collection.

The refusal by the jury for the Biennial Exhibition at the Corcoran Gallery of Art of Peter Blume's surrealist painting, "The Eternal City"—an attack on Fascism, depicting Mussolini as a jack-in-the-box in the Roman Forum—aroused vigorous protest from representatives of the

American Artists' Congress. On the night of the private view, the main entrance to the Corcoran Gallery was picketed, and printed protests were distributed to the invited guests.

In February, 1939, paintings by the French modernist Utrillo were refused free admission to this country by the New York Customs House because it was claimed that they were copies of post cards and therefore to be classed as commercial art. This decision was later reversed.

Among the painters of note who died during 1939 were Harriet Blackstone, Mary J. Riley, Gilbert White, Frederick C. Frieske, Robert Hallowell, Frank Tenney Johnson, Ernest Lawson, Ellsworth Woodward, and William Woodward, all of this country; and Boris Grigoriev, of Russia, Henri E. Le Sidaner of France, Alphonse Mucha of Czecho-Slovakia, and Bruno Liljefors of Sweden.

An extraordinary number of books on art came from American publishing houses in 1939, the majority of them elaborately illustrated not only in black and white but in color. Notable among these were: *A Treasury of Art Masterpieces* with text by Thomas Craven; *World-Famous Paintings*, edited by Rockwell Kent; *Modern American Painting*, by Peyton Boswell; *American Painting Today*, edited by Forbes Watson; *Some Old Portraits*, Booth Tarkington; *Gist of Art*, by John Sloan; a biography of Louis M. Eilshemius entitled *And He Sat Among Ashes*, by William Schack; *An American Artist's Story*, autobiography of George Biddle, and *Drawings of the Florentine Masters*, by Bernard Berenson. Among foreign publications were: *Masterpieces of European Painting in America*, edited by Hans Tietze; *French Painting in the Seventeenth Century*, by Edouard Marchel, and *Leonardo da Vinci*, by Sir Kenneth Clark.

See ART EXHIBITIONS; ART MUSEUMS; ART SALES.

LEILA MECHLIN.

PALAU. See JAPANESE PACIFIC ISLANDS.

PALESTINE. A territory on the east coast of the Mediterranean, administered by Great Britain under the mandate of the League of Nations since Sept. 29, 1923. Capital, Jerusalem.

Area and Population. Area, 10,429 square miles; population on Dec. 31, 1938, 1,435,285 (Moslems, 900,249; Jews, 411,422; Christians, 123,614). Births per 1000 (1938), 38.9; deaths per 1000, 15.03; immigrants (1937), 12,475 (10,536 Jews). Populations of the chief cities in 1938: Tel-Aviv, 140,000 (all Jews); Jerusalem, 126,000; Haifa, 100,000; Jaffa, 69,000. Jewish immigrants exceeded emigrants by 8085 in 1938 while there was a net migration loss of 6785 Moslems and 1321 Christians.

Education. In 1937-38 there were 402 public schools for Arabs, with 49,300 pupils (mostly Moslems); 184 private Moslem schools, with 14,052 pupils; 622 Jewish schools, with 71,376 pupils; 193 Christian schools, with 24,046 pupils. The Hebrew University at Jerusalem had 733 students; Hebrew Technical Institute, Haifa, 499.

Production. Agriculture is the main occupation, although manufacturing is rapidly growing in importance. The chief crop is citrus fruit (1938-39 exports, 15,310,436 cases valued at £P4,370,078). Yields of other leading crops were (1938, in metric tons): Wheat, 44,400; barley, 66,700; corn, 8000; potatoes, 9500 (1937); tobacco, 2500 (1937); sesameum, 4000; olive oil,

6900. The 1938 wine yield was 31,000 hectoliters. Melons, durra, kersenneh, figs, tomatoes, bananas, and dates are grown. Wool and mohair clip (1938), 500 metric tons. Potash (24,000 metric tons in 1938), bromine (exports, 523 metric tons, 1937), and salt (9000 metric tons, 1938) are the chief minerals. Principal manufactures: wine, soap, olive oil, metals and machinery, foodstuffs, cement, wood products, chemicals.

Foreign Trade. Merchandise imports in 1938 were £P14,242,438 (£P15,903,666 in 1937); exports, £P5,020,368 (£P5,813,536). Military stores accounted for £P2,676,860 of imports (£P468,959 in 1937). Re-exports of goods included in import total for 1938 were £P663,217; the additional transit trade (exclusive of 2,079,081 tons of crude petroleum received at Haifa via pipeline from Iraq), £P671,915. Imports from the United Kingdom in 1938, £P4,235,821; exports to U.K., £P2,468,854. See IMPORTS AND EXPORTS.

Finance. The final returns for the fiscal year ended Mar. 31, 1939, showed budget revenues of £P4,235,000 (£P4,744,000 in 1937-38) and grants-in-aid from the British Government of £P1,702,000 (£P153,000). Actual expenditures were £P5,693,000 in 1938-39, including £P1,597,000 spent for defense and public security; in 1937-38 expenditures were £P7,298,000 (£P1,920,000 for defense and security). The 1939-40 budget estimated total receipts at £P6,396,000, including British grants-in-aid of £P2,307,000, and total expenditures at £P6,276,000, including £P2,146,000 for defense and security. After 1937-38 the British Government bore the major part of the cost of maintaining British military forces in Palestine, which is not covered by the above grants-in-aid to the Palestine Government.

Communications. Railways in 1938 extended 328 miles; highways, 1914. There was completed during 1939 the Palestine section of an automobile highway from Haifa to Baghdad, Iraq, following along the oil pipeline from the Iraq fields and connecting the six airports located along the line. Completion late in 1939 of an asphalt highway across the western edge of the Sinai Desert to Ismailia on the Suez Canal brought Palestine within five hours by automobile from Cairo, Egypt.

The principal civil airport is at Lydda, used by Imperial Airways, Royal Dutch Air Line, (Egyptian) Misr Air Line, and Palestine Airways, which operates between Tel-Aviv, Lydda, Haifa, and Beyrouth, Syria. The Italian Alla Littoria service extended to Haifa. During 1938 2761 passengers and 46 tons of mail were delivered at Palestine airports and 3179 passengers and 37 tons of mail departed. Shipping tonnage entering the ports with cargo and ballast in 1938 was 5,244,000; cleared, 5,208,000. See ROADS AND STREETS.

Government. The government is administered by a High Commissioner and Commander-in-Chief (Sir Harold Alfred MacMichael assumed office Mar. 1, 1938), who is appointed by the British Crown and assisted by executive and advisory councils. The Jewish, Moslem, and Christian communities have autonomous control of their religious, cultural, and communal affairs. Official languages, English, Arabic, Hebrew.

HISTORY

The Tripartite Conference. While the Arab revolt against British authority in Palestine was largely stamped out during 1939, and terrorism by intransigent Arab and Jewish groups declined

as compared with 1938, little progress was made toward a settlement of the basic Arab-Jewish dispute.

The tripartite conference of Arab, Jewish, and British representatives, for which preparations were made late in 1938 (see 1938 YEAR BOOK, pp. 560-562), met in London for six weeks beginning Feb. 7, 1939. All parties and groups interested in the Palestine question were represented—the British Government; the various Jewish factions in Palestine and the Jewish communities in the United States, South Africa, and many European countries; the Grand Mufti's adherents and the rival Arab National Defense Party of Palestine; and the governments of the other Arab states (Egypt, Iraq, Saudi Arabia, Yemen, and Trans-Jordan). In an effort to secure the co-operation of the Grand Mufti of Jerusalem, who inspired and directed the Arab revolt of 1937-38 from his refuge in Beyrouth, Syria, the British on Dec. 5, 1938, released five of his leading associates who had been exiled from Palestine to Seychelles (q.v.) in 1937.

The London conference, however, proved fruitless. As in previous efforts at Arab-Jewish co-operation, the question of Jewish immigration into Palestine was the rock on which the conference was wrecked. The Arabs demanded cessation of Jewish immigration as a menace to their numerical superiority in Palestine, asserting that it had the political objective of insuring Jewish domination. They demanded also the curtailment of land purchases by Jews, replacement of the mandate by an independent Arab state allied to Britain, and abolition of the Balfour Declaration. The Jews, on the other hand, rejected any scheme that would legally establish their status as a permanent minority, such as the Arab offer of "minority rights." They held out for equality of status with the Arabs and for retention of the mandate and the Balfour Declaration.

In an effort to break this deadlock, the British Government late in February tentatively advanced a plan of its own. This was denounced by the Jews as a gross betrayal and was likewise rejected by the Arabs as inadequate although the plan went far toward meeting Arab demands. After some discussion the British on March 15 submitted revised proposals to the conference with the statement that the plan was open to discussion but not to major alteration in any of its main principles. Again the Arabs and Jews were unable to reach an agreement on the British plan and the London Government accordingly announced that it would impose its solution.

The White Paper. After the conference had disbanded, the definitive British plan was published on May 17, 1939, in the form of a White Paper. This statement of future British policy declared the Balfour Declaration's pledge to promote the development of a Jewish National Home "meant . . . not the imposition of a Jewish nationality upon the inhabitants of Palestine as a whole but the further development of the existing Jewish community with the assistance of Jews in other parts of the world, in order that it may become a center in which the Jewish people as a whole may take, on grounds of religion and race, an interest and pride."

Along with the concept of a Jewish national state, the White Paper rejected the Arab contention that the British were obligated to set up an independent Arab state in Palestine under the pledges made by Sir Henry McMahon on behalf

of the British Government in 1915. It declared that the ultimate British objective was the establishment of "an independent Palestine State . . . in which the two peoples . . . , Arabs and Jews, share authority in government in such a way that the essential interests of each are secured."

On the basis of these principles, the White Paper outlined "British intentions regarding the future government of Palestine" as follows:

Establishment within ten years of an independent Palestine State in such treaty relations with the United Kingdom as will provide satisfactorily for the commercial and strategic requirements of both countries in the future.

British control during the transitional period preceding independence, with Jews and Arabs being given an increasing part in the government, the objective being to place Palestinians in charge of all departments of government, with the assistance of British advisers and subject to control of the British High Commissioner. Arabs and Jews to serve as heads of departments, approximately in proportion to their respective populations.

Eventual establishment of an elective legislature if public opinion shows itself in favor of such a development and if local conditions permit.

Five years after peace and order is restored, the establishment of an Arab-Jewish-British body to draft a constitution. Both the constitution and the Anglo-Palestinian treaty of alliance must satisfy the British Government's requirements concerning the security of, and freedom of access to, the holy places; the protection of the different communities in Palestine; and the protection of British strategic interests.

Jewish immigration during the next five years to be permitted at a rate which, if the economic absorptive capacity permits, will bring the Jewish population up to approximately one-third of the total population of the country. After a five-year period in which about 75,000 Jews would be admitted, no further Jewish immigration to be permitted without acquiescence of the Palestine Arabs.

Exercise by the High Commissioner throughout the transitional period of powers to prohibit and regulate transfers of land from Arabs to Jews.

Reactions to British Plan. The Jews in Palestine showed their violent disapproval of the proposals by demonstrations on May 18 in which a British policeman was killed and more than 100 Jews wounded. Symbolic strikes continued for several days and these were followed by a long period of Zionist non-co-operation with the British administration in Palestine. Jews in other parts of the world deluged the London authorities with protests; in the United States they enlisted the aid of government officials in seeking to change British policy.

The Arab followers of the Grand Mufti also flatly rejected the British policy as inadequate, but the Arab National Defense Council accepted the White Paper as a basis for discussion. The governments of Egypt and Iraq announced their formal opposition to the White Paper but the other Arab rulers were said to have urged the Mufti to accept the British terms. The British House of Commons approved the White Paper by a smaller government majority than usual after Winston Churchill and David Lloyd-George had attacked the British proposals as a repudiation of former pledges. The Permanent Mandates Commission of the League of Nations studied the British White Paper in June. Its report, issued August 17, declared the White Paper was not in accordance with the interpretation that the commission, the League Council and the British Government itself, had always placed upon the Palestine mandate. However three of the seven members held that circumstances justified the new policy providing the League Council approved it.

Jewish anger at the government's policy was increased when Colonial Secretary Malcolm MacDonald on July 12 prohibited all Jewish immigration into Palestine for six months beginning

October 1. He told the House of Commons that 8000 illegal immigrants were either in or about to enter Palestine, that the illegal influx represented an organized movement to smash the White Paper policy, and that it was undermining Arab confidence in British good faith. The Commons again supported the government's policy. But with the outbreak of war in Europe, the immigration policy was modified. It was reported late in September that Jewish refugees from Eastern Europe were entering Palestine illegally at the rate of 1200 or more a week, but that the British authorities were releasing them after first placing them in concentration camps.

Decline of Disorders. The stringent military measures taken late in 1938 by Lieut.-Gen. R. H. Haining, in command of British forces in Palestine, produced results in 1939. The Arab bands waging warfare against the British and the Jews were gradually decimated, cut off from their sources of supply, and deprived of support from the Arab population. Between October, 1938, and the middle of August, 1939, British authorities reported that their forces had killed 34 leaders of bands, including six of the most prominent, and about 1200 of their followers. Most of these losses were inflicted in numerous clashes between relatively small armed forces. Due to their superior armament, the British losses were much lighter.

With the breaking up of the invisible government established by the Arab rebels in 1938 and the restoration of peace, the British relaxed many of the restrictions imposed upon the entire Arab population. While extremist Arabs still remained unreconciled, the bulk of the Arab population appeared to have been won over to a more co-operative attitude by the display of military force coupled with the concessions to Arab nationalism made in the White Paper. Accordingly some of the British forces in Palestine were withdrawn in August. The Grand Mufti, Haj Amin El Huseini, who escaped from the French authorities at Beyrouth in mid-October and fled to Baghdad, was reported by the Prime Minister of Egypt early in November to have accepted the British White Paper proposals for settlement of Arab-Jewish difficulties in Palestine.

These results were partly offset by the increase of terroristic activities by the radical Revisionist wing of the Zionists in Palestine following publication of the White Paper and the curtailment of immigration. The Revisionists held that the White Paper policy testified to the failure of the moderate policy of Dr. Chaim Weizmann, head of the Zionist movement, and urged his removal. They also acknowledged responsibility for a series of bomb outrages that claimed 78 lives (72 Arabs, 4 Jews, 2 British constables) during June and July alone. The police curbed the terroristic wave by numerous arrests of Revisionist members and by punishing Jewish communities that sheltered terrorists. Moreover the bulk of the Jews opposed the Revisionist tactics, as was indicated in August by the re-election of Dr. Weizmann as president of the Zionist Congress by a larger majority than before.

Palestine and the War. Despite the hatreds aroused by the three-cornered struggle in Palestine, both Jews and Arabs announced their support of Great Britain when the latter became involved in war with Germany. Anti-British propaganda circulated in Palestine and other Arab countries by Italy and Germany was largely nullified as a result of Moslem indignation at Musso-

lini's invasion and conquest of Albania, with its 700,000 Moslems, in April, 1939. The British authorities established control of foreign exchange transactions on September 7 and enrolled thousands of Jewish volunteers and Arab levies in the British Near Eastern military and auxiliary defense services, directed from Jerusalem.

See GREAT BRITAIN and TRANS-JORDAN under *History*; JEWS.

PALMYRA, pāl-mi'ra (**CORNWALLIS**) **ISLANDS.** A group of 52 small islands in the central Pacific (5° 40' W.; some 850 miles S. by W. of Hawaii), belonging to the United States since 1862. The Naval Appropriations Bill of 1939 called for the establishment of a naval base on one of the islands at a cost of \$13,000,000. A suit to acquire title to the islands was filed by the United States Government in Federal Court, Honolulu (Dec. 12, 1939) after a group of Hawaiians had asserted private ownership of the islands. See HAWAII under *History*.

PANAMA. A republic of Central America, bisected by the Panama Canal Zone (q.v.). Capital, Panamá.

Area and Population. Area, 32,380 square miles; population (estimated, Dec. 31, 1937), 548,000 excluding the Canal Zone. Racial division of population (1930 census): 78,813 whites, 69,583 Negroes, 42,897 Indians, 4138 Orientals, 249,583 mestizos. Estimated populations of the chief cities were Panamá, 82,827; Colón, 33,460; David, 8000.

Defense. There is no army or navy (see *History*). There is a National Police Force of 1500 officers and men.

Education and Religion. About 50 per cent of the inhabitants are illiterate. There were 61,706 children in 629 primary schools (1938), 3830 secondary students (1937), and about 411 students in the National University. Matriculation fees for secondary students were abolished in 1938. Roman Catholicism is the dominant religion, but other faiths have a considerable following.

Production. Agriculture, cattle raising, lumbering, pearl fishing, commerce, and the tourist business are the chief occupations. There were exported in 1938 6,399,928 stems of bananas and 4041 metric tons of cacao. Fresh beef, cattle hides, mother-of-pearl shells, coffee, rice, oranges, vegetables, chicle, ivory nuts, balata, hardwoods, and tortoise shell are other products, many of which find a market in the Canal Zone. Some gold and salt is mined. There is manufacturing on a small scale for domestic consumption.

Foreign Trade. Imports in 1938 were \$17,651,454 (\$21,828,175 in 1937); exports and re-exports, \$7,668,566 (\$8,619,195). The United States furnished 57.4 per cent of the 1938 imports (52 in 1937); Japan, 9.3 (14.1); Germany, 6.2 (5.4). Of the domestic exports, the United States took 89.3 per cent (90.9 in 1937); Canal Zone, 4.9 (4.0); Germany, 3.9 (2.5). The 1938 value of banana exports was \$2,755,029; cacao, \$441,783. See IMPORTS AND EXPORTS.

Finance. The budget estimates for the biennial period 1937-38 placed revenues and expenditures at \$18,814,000; for 1939-40, \$22,795,000.

The public debt on Mar. 31, 1939, totaled \$21,300,000 (domestic, \$3,400,000; foreign, \$17,900,000). The unit of currency is the balboa, equivalent to one U.S. dollar.

Transportation. There are about 230 miles of railways, including the Canal Zone. High-

ways on Jan. 1, 1939, extended 725 miles, excluding 90 miles of all weather roads in the Canal Zone (see *History*). Panamá is the junction point of the Pan American Airways South American circuit. Internal air route mileage on Jan. 1, 1939, 270 miles; in Canal Zone, 47 miles. For shipping, see PANAMA CANAL.

Government. The Constitution vests executive power in a President elected by direct popular vote for four years and ineligible for re-election. There is a National Assembly of 32 members elected for four years, which meets biennially on September 1. President in 1939, Dr. Juan Demóstenes Arosemena, who assumed office Oct. 1, 1936.

HISTORY

Treaty with United States. After three years of delay caused by objections raised in the United States Senate, the general treaty signed between the United States and Panama on Mar. 2, 1936, was ratified by the American Senate on July 25, 1939, and went into effect with the exchange of ratifications two days later.

The new treaty revised the convention concluded by the two governments on Nov. 18, 1903, which had governed their relations for 35 years. It eliminated several provisions of the 1903 treaty that the Panamanian Government considered infringements upon its sovereignty, including the clause pledging the United States to guarantee and maintain Panama's independence. A summary of the main features of the new treaty, prepared by the State Department, follows:

Article I establishes a basis of friendship and co-operation between Panama and the United States.

In Article II the compliance of Panama with the provisions of Article II of the convention of Nov. 18, 1903, in turning over to the United States additional lands and waters beyond those specifically mentioned therein, is recognized. The requirement of further lands and waters is considered improbable by both Governments, but they nevertheless recognize their joint obligation to insure the continuous operation of the Canal and undertake to reach an agreement should additional lands and waters be in fact necessary for this purpose.

Article III contains various provisions restricting the commercial activities of the United States in the Canal Zone in order that Panama may take advantage of the commercial opportunities inherent in its geographical situation. In this article are listed the classes of persons who may reside in the Canal Zone and the persons who are entitled to make purchases in the Canal Zone commissaries.

Article IV provides for the free entry of merchandise entering Panama destined for agencies of the United States Government, and provides that no taxes shall be imposed upon persons in the service of the United States entering Panama or upon residents of Panama entering the Canal Zone.

Article V provides that port facilities other than those owned by the Panama Railroad Co. in the ports of Panamá and Colón may be operated only by Panama; exempts from Panamanian taxation vessels using the canal which do not touch at ports under Panamanian jurisdiction; and provides for the establishment of Panamanian customhouses within the Canal Zone. The United States undertakes to adopt such administrative regulations as may be necessary to assist Panama in controlling immigration into that country.

Article VI revises Article VII of the convention of Nov. 18, 1903, in that the United States renounces the right to acquire, by the exercise of the right of eminent domain, lands or properties in or near the cities of Panamá and Colón, although retaining the right to purchase necessary lands or properties. The third paragraph of the said Article VII, granting the United States the right to intervene in the cities of Panamá and Colón and the territory adjacent thereto for the purpose of maintaining order, is abrogated.

Article VII provides that beginning with the 1934 annuity payment the annual amounts of these payments shall be 430,000 balboas or the equivalent thereof. In a supplementary exchange of notes the balboa is defined as having a gold content equal to that of the present United States dollar.

Article VIII provides for a corridor under Panamanian jurisdiction to connect the city of Colón with other territory of Panama.

Article IX establishes a similar corridor under American jurisdiction to connect the Madden Dam area with the Canal Zone proper.

Article X provides that in case of emergency both Governments will take such measures of prevention and defense as they may consider necessary for the protection of their common interests.

Article XI reserves to each country all rights enjoyed by virtue of treaties now in force between the countries, and preserves all obligations therein established, with the exception of those rights and obligations specifically revised by the present treaty. The juridical status of the Canal Zone, as defined in Article III of the 1903 convention, thereby remains unaltered. . . .

Article X was the main cause of the U.S. Senate's delay in ratifying the treaty. It provides for consultation between the two governments in the event the United States forces considered it essential to enter Panamanian territory in defending the Canal. The Senate committee withheld its approval of this article until its meaning was clarified by an exchange of notes on Feb. 1, 1939. In this exchange, the Panamanian Government agreed that if confronted with an emergency threat to the Canal, the United States need not delay armed or other action to meet the threat until after it had consulted with the Government of Panama.

Article VII ended the dispute arising from the refusal of Panama to accept the annuities of \$250,000 tendered by the United States in devalued dollars beginning in 1934. It was announced September 20 that the U.S. Government had paid Panama \$2,580,000 in complete settlement of the annuities in arrears. Immediately after ratification of the treaty the Panamanian Government started negotiations, authorized in April, to refund two external loans aggregating \$14,916,000, pay defaulted interest totaling \$3,500,000, and resume service on the foreign debt.

Along with the general treaty, the United States Senate also ratified the Trans-Isthmian Highway Convention providing for a highway between Panamá and Colón running through both Panamanian and Canal Zone territory. Under other agreements, the United States obtained leases from Panama on sites for auxiliary air bases at strategic points in Panamanian territory. Work was under way in 1939 upon such a base at Rio Hato, 75 miles southwest of the Pacific entrance of the canal, and upon a connecting highway costing about \$3,000,000, with the United States supplying materials and equipment and the Panamanian Government the labor.

The action of the United States and Panama in raising their legations at Panamá and Washington, respectively, to embassies testified to the growing importance of their relationships. On the eve of the passage of the U.S. fleet through the canal, the Panamanian Government on April 25 ordered a census of all foreigners residing in the republic as a precautionary measure against sabotage. On August 15 the 25th anniversary of the opening of the canal was celebrated with ceremonies in the Canal Zone and Panama.

Political Developments. On October 22 Dr. Arnulfo Arias, brother of former Pres. Harmodio Arias, was nominated for the Presidency by three groups controlling 18 of the 32 seats in the National Assembly—the National Revolutionary, National Liberal, and Conservative parties. This was believed equivalent to his election in June, 1940.

President Arosemena (q.v.) died on December 15, and was succeeded temporarily by Minister of Finance Ezequiel Fernández Jaén, second Vice President, pending the arrival of First Vice President Augusto S. Boyd, who was serving as Ambassador to Washington. Dr. Boyd was sworn in as President on December 18.

By a law published Jan. 5, 1939, the President obtained emergency financial and economic powers up to Aug. 31, 1940. A law published January 12 authorized transfer of the \$6,000,000 Constitutional Fund from New York to Panamá as soon as it ceased to be used as a guarantee of the external debt.

Other Foreign Relations. Outstanding developments were the hostile demonstration against the crews of two visiting Italian cruisers in February, the violent anti-German press attacks precipitated by the Nazi annexation of Bohemia and Moravia in March, and the holding in Panamá in September of the conference of Foreign Ministers of the American republics (see PAN AMERICANISM). See NICARAGUA under *History*; PAN AMERICAN UNION.

PANAMA, DECLARATION OF. See PAN AMERICANISM; PAN AMERICAN UNION.

PANAMA CANAL. The Panama Canal, crossing the Isthmus of Panama between Limon Bay on the Caribbean coast and Panama Bay on the Pacific, a distance of 40.27 miles from shoreline to shoreline, was opened for traffic on Aug. 15, 1914. It thus virtually completed 25 years of operation on June 30, 1939, the day concluding the fiscal year covered in its annual report.

For the fiscal year ended with June 30, 1939, the total of transits of the canal, made by 1609 toll-paying, ocean-going, merchant vessels, was 5903; for 1938, 5524. The aggregate of tons of cargo that passed through was 27,866,627 for the fiscal year 1939; for 1938, 27,385,924. The net tonnage according to the rules of measurement in use was somewhat less: 27,170,007 for 1939; for 1938, 25,950,383 (as partly adjusted for 8 months prior to new rules of measurement that went into effect Mar. 1, 1938). The yearly total of tolls levied on vessels for passage rose to \$23,661,021 for 1939, from \$23,169,889 for 1938. The net revenues from the operation of the canal proper fell slightly, nevertheless, to \$13,841,071 for 1939, from \$13,909,903 for 1938. Additional revenue from operations connected with the canal (vessels refueled, repaired, provisioned, drydocked, or provided with stores) came to \$681,272 for 1939; for 1938, to \$824,613. The aggregate net revenue of the canal and of its business units thus was \$14,522,344 for 1939, as against \$14,734,516 for 1938. The consequent yearly return on a stated net capital investment, in the canal and its commercial units, of \$508,346,822, was 2.86 per cent for 1939, as against 2.90 for 1938.

In connection with the figures for earlier years the results for the fiscal year 1939 marked a further rise in activity from 1932's minimum in the course of the shrinkage that followed the fiscal year 1930, but still fell far short of 1930's totals.

In addition to cargo-bearing vessels, the canal carried a considerable total of ships of the U.S. Government toll-free as well as those of the governments of Panama and Colombia and vessels passing through for the sole purpose of reaching the site for repairs. It also carried warships of other governments and vessels not built to take cargo (e.g. dredgers), for toll on the basis of displacement. Of all the vessels and total displacement

in these classifications, ships of the U.S. Navy made the chief part; they accounted (fiscal year 1939) for 453 crossings of the canal (not necessarily by that many individual vessels), and the aggregate displacement listed in these transits was 1,644,272 tons. Passages of British warships numbered 17, aggregating 63,417 tons' displacement and tolls thereon of \$31,708. They furnished most of the totals for ships that paid toll on displacement, not on burden: the passages of all such ships numbered 23, aggregated a displacement of 94,531 tons, and brought tolls of \$47,265.

In point of total cargo carried through the canal by ships according to nationality, the United States led. Its vessels carried (fiscal year 1939) 9,909,380 tons, or 35.6 per cent of all cargo taken through, as against 9,892,619 tons (1938). Corresponding totals for other nationalities were: British, 6,801,556 tons (1939), and 6,417,016 (1938); Norwegian, 3,408,078 (1939) and 3,433,571 (1938); Japanese, 1,710,303 (1939) and 1,877,502 (1938); German, 1,468,996 (1939) and 1,518,593 (1938); Swedish, 1,008,245 (1939) and 763,049 (1938); Danish, 727,552 (1939) and 865,235 (1938); Netherlands, 675,105 (1939) and 749,642 (1938); Greek, 666,471 (1939) and 525,351 (1938); French, 501,752 (1939) and 567,288 (1938); all other, 989,189 (1939) and 776,058 (1938).

The freight that went through the canal eastward bound, from Pacific to Atlantic waters, amounted to more than double that bound westward, as to tonnage, though presumably not as to value. For the fiscal year 1939 the eastward-bound freight amounted to 18,555,360 tons; the westward-bound, to 9,011,267. Of the eastward-bound freight nearly three-fifths originated on North America's western coast; this whole coast plus the Hawaiian Islands sent through the canal 10,959,658 tons; the U.S. western coast alone, 7,521,585, Canada's western coast, 2,873,452. South America's western coast sent 5,345,115 tons; Australasia, 946,340; Asia, 1,604,247. The origin of the westward-bound freight was more predominantly North American: 78 per cent of it started from the eastern coast of North America; this whole coast plus the West Indies sent westward through the canal 7,033,969 tons; the U.S. eastern coast alone, 6,034,326; Canada, 348,410. It must be remembered as to all these figures, that the data on the movement of freight through the canal, like the tolls charged thereon, rest on the tonnage of the freight and not (as in the case of the classified tariffs of railroads) partly on considerations connected with the value of the goods. In view of this, the magnitude of the components of freight passing through the canal, as here presented, need not closely correspond to the order that would be established on the basis of value.

Projected Construction. The U.S. Congress passed the Bland Act (signed August 11), authorizing the Government to build a third set of locks, thus to afford three passages for vessels at every break between levels. The act did not carry appropriations for the construction of these locks, and the preliminary plans for them were not yet ready at the time. The act, however, gave approval to additional locking facilities as the means both to raise the peak of the canal's capacity for bearing ships across the isthmus and to increase insurance against the risk of the canal's being put out of service by acts of war. Preliminary construction activities on the new locks was under way at the year end.

Administration. The administration of the Panama Canal is identical with that of the PANAMA CANAL ZONE (q.v.).

PANAMA CANAL ZONE. A strip of territory extending five miles to either side of the Panama Canal, across the Isthmus of Panama. Area, 552.8 square miles; includes water, about 191 square miles (chiefly Gatun Lake, 163 square miles). The United States holds the area in virtue of a treaty of 1903 with the Republic of Panama, by which the latter party granted perpetual use, control, and occupation.

The population, exclusive of the commissioned and warrant officers and the enlisted members of Army or Navy, were enumerated in June, 1939: They numbered 28,978; of these, 7714 were employees of the Panama Canal or of the Panama Railroad Company; and of such employees, 2787 were citizens of the United States. About 700 U.S. citizens and 5000 natives employed by canal or railroad lived outside of the zone. The death rate of the population (1938) was 5.79 per 1000. The birth rate, 7.96. The prevalence of malaria was 10.4 cases per 1000 of the population, the lowest yearly rate that had been recorded. Protected by careful inspection of vessels, the zone, despite vessels' arrival from all quarters of the maritime world had no cases of plague, cholera, typhus, or yellow fever. The public schools—of two types, white and colored—had in 1939 a daily attendance of 2686 white and 2818 colored pupils; the junior college counted 141 enrolled pupils, its highest total subsequent to its opening in 1934.

Government. The Canal Zone is in effect a military reservation of the U.S. Army. Its administration is situated at Balboa Heights; all civil administrative authority normally rests in an appointed Governor, Brig. Gen. C. S. Ridley, U.S.A. In the Governor is concentrated authority for the operation and maintenance of the canal and its auxiliary services to shipping and for the maintenance of law, order, health, education, and related matters, among the inhabitants; the Governor is also president, ex officio, of the Panama Railroad Company, a separately operated adjunct of the canal. The defense of the Canal Zone, however, and the command of the forces for this purpose, are the charge of another officer (in 1939 Maj. Gen. David L. Stone, U.S.A.) styled "the officer commanding the United States troops stationed in the Canal Zone." But at the outset of war between the German and the British and French governments the President of the United States, by executive order of September 6, assigned temporarily to this officer authority to operate the canal and its adjuncts and to govern the Canal Zone; the same order put the Governor under the direction of the military commander. The foremost apprehended risk at the time was lest a belligerent should covertly put the canal out of operation in order to prevent its service to the opposing side; and another executive order of the President (September 5) took the precaution of requiring ships, as a condition to entering the canal, to submit to inspection, to armed guards, or even to the removal, for the time, of their own personnel, in case that the authorities should judge that safety demanded it.

History. The treaty executed by the Republic of Panama and the United States in 1936 was at last ratified by the U.S. Senate (July 25); it had been ratified by Panama soon after its execution and went into effect promptly after the U.S. Senate's action (for particulars of the treaty, see

PANAMA). The intention of the United States and the apparent effect of the treaty was to promote joint action on the part of the two signatories in the event of an attack on the Canal Zone; at the same time, an exchange of statements between the two governments was reported to have recorded the understanding, on both their parts, that the United States, in emergency, might exercise great liberty in taking necessary steps of defense on its own account, prior to consultation with the authorities of Panama. As the Panama Canal Zone, too narrow to shelter the canal effectively from attack by land, might need in emergency to extend its defenses into the Republic of Panama, the treaty added an important element to its security.

See COLOMBIA under *History*.

PAN AMERICANISM. With the outbreak of the European War (q.v.) on Sept. 1, 1939, and the resultant threat to the peace, independence, and economic prosperity of the American republics, the movement for closer inter-American political and economic collaboration received a great impetus. The machinery and moral solidarity necessary for such co-operation had been developed over the preceding 50 years, particularly by the Pan American Conferences held in Montevideo, Uruguay, in 1933; in Buenos Aires, Argentina, in 1936; and in Lima, Peru, in December, 1938 (see 1933, 1936, and 1938 YEAR BOOKS under *Pan American Conference*). The other agency chiefly responsible for developing the bases of inter-American co-operation was the Pan American Union (q.v.), which serves as permanent organ of the Pan American Conferences.

Panama Conference. At Buenos Aires in 1936 and at Lima in 1938 the American republics had agreed upon a procedure for consultation "to preserve the peace of the American continent." In accordance with this agreement, the Government of Panama following the outbreak of the European conflict invited the Foreign Ministers of the 21 American republics to confer on measures for meeting the problems raised by the war. This move was supported by Colombia, Peru, and Cuba, and the invitation was accepted with alacrity by the remaining governments.

The conference was held in the city of Panama, with official delegations from all 21 republics in attendance, from September 23 to October 3. Its efforts were concentrated upon three principal objectives—the maintenance of neutrality, the preservation of peace, and the promotion of economic co-operation. Working in an atmosphere of exceptional cordiality and harmony, the conference took action upon each of these points.

Neutrality. A General Declaration of Neutrality, approved October 3, set forth the "standards of conduct which, in conformity with international law and their respective internal legislation, the American Republics propose to follow in order to maintain their status as neutral states and fulfill their neutral duties, as well as the recognition of the rights inherent in such a status." The governments agreed to "maintain close contact with a view to making uniform so far as possible, the enforcement of their neutrality and to safeguarding it in defense of their fundamental rights." The declaration provided for an Inter-American Neutrality Committee, composed of seven experts in international law, to study and formulate recommendations with respect to neutrality problems in the light of experience and changing circumstances. This Committee was scheduled to sit in Rio de

Janeiro, beginning in January, 1940, for the duration of the war. The seven members were appointed, respectively, by the governments of Argentina, Brazil, Chile, Costa Rica, Mexico, the United States, and Venezuela.

In another resolution, the Foreign Ministers at Panama opposed the placing of foodstuffs and clothing intended for civilian populations on lists of contraband. They also declared that they did not consider contrary to neutrality the granting of credits to belligerents for the acquisition of foodstuffs and clothing. Still another resolution called for joint measures to "facilitate the action of the police and judicial authorities of the respective countries in preventing or repressing unlawful activities that individuals, whether they be nationals or aliens, may attempt in favor of a foreign belligerent State."

Preservation of Peace. The action of the Panama Conference in this field was of exceptional significance. It established a "safety belt" averaging 300 miles in width around the Western Hemisphere south of Canada (see map facing page 597). The European belligerents were asked to avoid all hostile acts within this zone. The text of the important sections of the Declaration of Panama, as this resolution was called, follows:

1. As a measure of continental protection, the American republics, as long as they maintain their neutrality, have the undisputed right to conserve free from all hostile acts by any belligerent non-American nation those waters adjacent to the American continents which they consider of primordial interest and direct utility for their relations, whether such hostile act is attempted or carried out by land, sea or air.

2. The governments of the American republics agree to make an effort to seek observance by the belligerents of the dispositions contained in this declaration through joint representations to the governments actually participating in hostilities or those that may participate in the future.

This procedure will in no wise affect the exercise of the individual rights of each State inherent in its sovereignty.

3. The governments of the American republics further declare that, whenever they consider it necessary, they will consult among themselves to determine what measures they can take individually or collectively for the purpose of obtaining fulfillment of the dispositions of this declaration.

4. The American republics, as long as there exists a state of war in which they themselves are not participating and whenever they consider it necessary, may carry out individual or collective patrols, whichever they may decide through mutual agreement or as far as the elements and resources of each one permit, in waters adjacent to their coasts within the zone already defined.

This extension of American territorial waters beyond the universally recognized three-mile limit met with a mixed reception. In the United States and elsewhere it was widely criticized as impractical and illegal. The United States, Argentina, Brazil, and Uruguay made some attempt to patrol the enormous stretches of seas within the safety zone adjoining their shores. But there was no lessening of belligerent activities, despite formal communication of the Declaration to the belligerent governments by the Government of Panama on October 4.

A number of German vessels were captured or scuttled within the safety zone as a result of Allied naval activities. On December 13 the German pocket battleship, *Graf Spee*, attempted to capture the French liner *Formose* off the Uruguayan coast and was thereupon driven into Montevideo harbor by three British warships after a day-long naval battle, part of which was fought within three miles of the Uruguayan shore. This defiance of the Declaration of Panama led to further consultation among the American governments, followed by a joint protest to France, Britain, and Germany on December 23. They were warned that belligerent

vessels might be prevented from supplying themselves and repairing damages in American ports if they committed warlike acts within the security zone. No replies were received up to the end of December.

Other resolutions of the Panama Conference, designed to consolidate peace, reaffirmed the Lima declaration of inter-American solidarity; appealed to the European belligerents for a peaceful settlement of the conflict and for the humanization of the war; urged the American governments to "eradicate from the Americas the spread of doctrines that tend to place in jeopardy the common Inter-American democratic ideal"; called for another meeting of American Foreign Ministers in Havana on Oct. 1, 1940, or before; and provided for another consultative meeting "in case any geographic region of America subject to the jurisdiction of any non-American state should be obliged to change its sovereignty and there should result therefrom a danger to the security of the American Continent."

Economic Co-operation. The Conference's main action in the field of economic affairs was the establishment of an Inter-American Economic and Financial Advisory Committee, composed of one expert from each of the 21 republics, to study problems of an economic nature growing out of the European struggle. To this committee was referred most of the economic and financial issues raised at Panama. In addition the Conference's resolution on economic co-operation urged the American governments to take specific steps to promote cheaper and better inter-American transportation and communication services; facilitate the free inter-American movement of capital and the granting of inter-American credits; prevent excessive increases in prices of manufactured articles destined for export; conclude regional agreements for solving common financial, fiscal, or economic problems; and expedite the construction of their respective sections of the Pan American Highway.

The Inter-American Economic and Financial Advisory Committee convened in Washington on November 15 under the chairmanship of Sumner Welles, Under-Secretary of State of the United States, and was still in session at the year-end. Its study of inter-American financial problems led to a consideration of plans for an inter-American bank. Later it studied the problem of developing Latin American natural resources and manufacturing industries with United States capital.

The activities of this committee were supplemented by several other conferences held during the autumn of 1939. In the latter part of October a conference on the promotion of trade between the United States and Latin America was held in Washington under the auspices of the U.S. Department of Commerce. Representatives of the Latin American republics, the U.S. Government, and United States retail distributing agencies attended. A five-point program was adopted to promote importation from Latin America by the United States of manufactured articles that could not be obtained from belligerent countries or made in the United States. Increased Latin American sales to the United States were expected to stimulate United States exports to Latin America.

Inter-American trade and monetary problems were also considered by the First Meeting of the Finance Ministers of the American Republics, held in Guatemala City on November 14-21. Finance Ministers or their representatives from all of the



Wide World

CONGRESSMEN STUDYING CANAL DEFENSES

Col. Glenn E. Edgerton, Acting Governor of the Panama Canal Zone (center, straw hat), explaining the Canal's military defenses from a set of plans to members of the U. S. Senate and House Military Affairs Committees, who made an inspection of the Canal in mid-November, 1939



Brown Brothers

THE PANAMA CONFERENCE

The Foreign Ministers of the American republics, meeting at Panama on Sept. 23-Oct. 3, 1939, to consult on joint peace, neutrality and economic measures

PAN AMERICANISM

republics except Paraguay attended. Resolutions adopted called for stabilization of the different American currencies to "make exchange possible and regularize the economies of the different countries"; the balancing of imports and exports, especially through capital investments in undeveloped countries; exchange of economic information, etc. The meeting asked the Inter-American Financial and Economic Advisory Committee, in session in Washington, to study the possibility of establishing a central financial clearing-house and investment agency for all the American countries.

For texts of resolutions adopted at the Panama Conference, see the Department of State *Bulletin*, Oct. 7, 1939, or *International Conciliation*, January, 1940, No. 356.

See also COMMUNISM; FASCISM; NEUTRALITY; PAN AMERICAN UNION; UNITED STATES under *Foreign Affairs*; and each of the American republics under *History*.

PAN AMERICAN UNION. The Pan American Union is an official international organization founded in 1890 as the International Bureau of American Republics and maintained by the 21 republics of the Western Hemisphere for the development among them of good understanding, friendly intercourse, commerce, and peace. It is controlled by a Governing Board, composed of the Secretary of State of the United States and the diplomatic representatives in Washington of the other republics, and is administered by a Director General and an Assistant Director chosen by the Board.

The Union published a monthly *Bulletin* which is issued in three editions, English, Spanish, and Portuguese, as well as numerous special reports on the countries which are members of the Union. These are widely distributed in all the republics of the American continent and are intended to make available information on the various aspects of inter-American activity.

The Pan American Union acts as the permanent organ of the International Conferences of American States which meet at intervals of five years. The last or Eighth of these Conferences was held at Lima, Peru, Dec. 9-27, 1938. The program and regulations of each Conference are prepared by the Governing Board of the Union, and in the interval between the Conferences the organization is engaged in giving effect to the resolutions adopted and also co-operates in securing the ratification of the treaties and conventions signed at each Conference.

The Lima Conference resulted in a considerable enlargement of the duties and responsibilities of the Pan American Union which during 1939 was engaged in giving effect to the conclusions adopted at the Conference. A new Division of Labor and Social Information was organized which began to function on Jan. 1, 1940, and the scope of other administrative divisions was broadened.

An outstanding event of 1939 in the field of inter-American relations was the meeting of Foreign Ministers of the American Republics held at Panamá from September 23 to October 3, to consider problems affecting the republics of the American Continent as a consequence of the outbreak of the war in Europe. The meeting adopted the Declaration of Panamá which undertook to establish a zone of security around the American Continent to be kept free of belligerent activities. An Inter-American Financial and Economic Advisory Committee was created which met at the

Pan American Union on Nov. 15, 1939 and was expected to continue in session during the period of the emergency arising out of the war. Provision was also made for the formation of an Inter-American Neutrality Committee of seven members which was named by the Governing Board of the Pan American Union on November 1 and which was expected to meet at Rio de Janeiro on Jan. 15, 1940.

The Third Pan American Highway Congress met at Santiago, Chile, from Jan. 11 to 19, 1939, and engaged in a broad and comprehensive discussion of the technical, financial, and administrative aspects of highway construction and maintenance. The First Pan American Sanitary Aviation Conference met at Montevideo from Feb. 2 to 9, 1939, with representatives in attendance from 12 countries and the Sanitary Bureau. The Conference considered questions relating to aeronautical medicine and sanitation designed to facilitate the movement of aircraft engaged in inter-American traffic. From Apr. 14 to 21, 1939, the First Inter-American Travel Congress met at San Francisco under the auspices of the Golden Gate International Exposition and adopted a series of resolutions designed to promote travel in the Americas. From Oct. 2 to 7, 1939, a Pan American Housing Congress was held in Buenos Aires in accordance with resolutions adopted at the Seventh and Eighth International Conferences of American States.

The First Meeting of Finance Ministers of the American Republics was held at Guatemala City from Nov. 14 to 21, 1939. The purpose of the meeting was to permit an informal exchange of views between representatives of the treasuries of the American Republics on matters of common interest. A series of resolutions was adopted on monetary and related questions.

Following the Pan American Congress of Municipalities which met at Havana in November, 1938, a meeting of the Pan American Commission on Inter-Municipal Co-operation was held at Chicago from Nov. 20 to 25, 1939. A program of co-operative action between the municipalities of the American Continent was drawn up and preparations were made for the Second Pan American Congress of Municipalities.

Pan American Day was again observed on April 14 and exercises appropriate to the occasion were held in all the 21 countries, members of the Union. At the Pan American Union a special session of the Governing Board was held at which President Roosevelt delivered an address. A concert of Latin American music was presented at the Union on the evening of April 14 at which the Secretary of State, Cordell Hull, who is also chairman of the Governing Board of the Union, delivered a brief address.

At the meeting of the Governing Board held on Nov. 1, 1939, the Secretary of State of the United States was re-elected chairman of the Board for the ensuing year. Hector David Castro, Minister of El Salvador, was at the same time elected Vice Chairman to succeed J. Richling, Minister of Uruguay. Headquarters of the Union are at the Pan American Building, Washington, D. C.; L. S. Rowe, Director General; Pedro de Alba, Assistant Director.

See the separate articles on the American republics under *History*; PAN AMERICANISM.

PANTELLARIA, pân-tèl'lâ-î-è'â. An Italian island (area, 32 sq. miles; population, 9082) situated in the Mediterranean 45 miles from the coast

of Tunisia and 62 miles from the Sicilian coast. Strategically situated to dominate the shipping route between the eastern and western Mediterranean, it was fortified by Italy during the crisis of 1935-37 in Anglo-Italian relations. It thus served as a counterweight to the British base at Malta (q.v.). The island has two small ports and is said to be equipped for use as an auxiliary air and submarine base (see map, 1938 YEAR BOOK, p. 360).

PAPER AND PULP. A comparison of the year 1939 with other years in the paper and pulp industry reveals that a new record in volume was made in the past year. Activity, as indicated by the production ratio of leading mills on Jan. 7, 1939, was 66 per cent of capacity; paper board mills at 45 per cent of capacity. This output was steadily increased and at the end of the first half of the year paper production rose to 81 per cent and paper board production to 70 per cent. Pulp mill operations were similar to that of paper. The heavy demand for paper increased pulp output about 20 per cent over that of the final quarter of 1938. Imports of pulp increased about 15 per cent, while exports were cut in half. Prices for all kinds of paper and pulp were relatively low and inadequate for profitable operations, despite the high volume. The relative low price level continued throughout the year. The large volume of speculative buying in September and October advanced paper prices only about 8 per cent.

The beginning of the second half of 1939 was marked by a substantial improvement in demand, followed by a steady increase in production, which was accelerated by the war in Europe, creating a shortage of paper and pulp in the belligerent countries. Production of paper rose to 92 per cent on September 16; paper board to 80 per cent, and remained well above those figures for the remainder of the year, with mills operating at capacity. In the last quarter of the year, some further moderate price advances in paper and pulp were made to cover the higher cost of chemicals and materials, which averaged 13 per cent above the low of the year. Production of all kinds of paper, except newsprint, was 15 per cent higher in October and 18 per cent at the end of 1939.

Domestic production of newsprint was 0.6 per cent above that of last year, shipments 6.7 per cent higher. Total domestic production in 1939 is estimated at 939,000 tons, compared with 820,055 tons in 1938. The value of paper and paper products consumed in 1938 was \$900,000,000, of which 40 per cent was paper board. The most conservative estimate for the year 1939 is over one billion dollars. Domestic production of all kinds of paper and paper board for 1939 is estimated by a leading authority at 13,441,000 tons, which is an all-time record for the industry.

STILLMAN TAYLOR.

PAPUA, pāp'ū-a; pā'pōō-ā, **TERRITORY OF.** A territory (formerly called British New Guinea) of Australia, comprising the southeastern part of the island of New Guinea (87,786 sq. mi.) and the Woodlark, Louisiade, Trobriand, and D'Entrecasteaux groups of islands (2754 sq. mi.). Total area, 90,540 sq. mi.; total population (1938), 277,401 including 1488 whites and some 275,000 Papuans. Capital, Port Moresby.

Production and Trade. Copra (11,400 metric tons exported in 1938) rubber, sisal hemp, and gold (27,000 fine oz., 1938) are chief products.

General imports (in old U.S. gold dollars) in 1938 totaled \$700,000; exports, \$800,000.

Government. For the year ending June 30, 1938, revenue totaled £A182,808; expenditure, £A183,403 (Australian £ averaged \$3.8955 in 1938). The territory is administered by a lieutenant-governor, aided by an executive council of 9 members, and a legislative council composed of the 9 councilors and 5 unofficial members. Lieutenant-Governor, Sir J. H. P. Murray.

PARAGUAY, pār'a-gwā. An inland republic of South America. Capital, Asunción.

Area and Population. Area, about 152,767 square miles, including 91,120 square miles in the Chaco Boreal awarded Paraguay by the arbitral decision of Oct. 10, 1938, ending the Bolivian-Paraguayan frontier dispute. Estimated population, 1,000,000, of mixed Spanish and Guarani Indian blood with the exception of the small white ruling class. Spanish and Guarani are the spoken languages; Spanish, the language of government and commerce. Estimated populations of the chief cities: Asunción, 90,000; Villarrica, 30,000; Encarnación, 15,000; Concepción, 12,000. During the year ended Sept. 1, 1937, 9151 immigrants entered the republic.

Education and Religion. There is widespread illiteracy. In 1937 there were 139,466 pupils in 1742 primary schools, 2034 in secondary schools, and 350 students in the National University. Teaching of anti-totalitarian doctrines in all primary schools was made compulsory on Dec. 30, 1938. Roman Catholicism is the state religion, but freedom of worship is granted other faiths.

Production. The chief occupations are agriculture, stock raising and the exploitation of forests. Estimated production of the chief crops in 1937 was (in 1000 lb.): Mandioca, 1,100,000; sugarcane, 698,250; sweetpotatoes, 198,900; corn, 144,300; cotton, 90,160; yerba maté (native tea), 38,400; peanuts, 19,900; beans, 44,100; tobacco, 19,500; rice, 18,300; castor seed, 21,100. Oranges and bananas are extensively grown.

Production of quebracho extract is about 55,000 metric tons annually. Chief exports industries are the extraction of tannic acid from quebracho logs, meat-packing, cotton ginning, and preparation of yerba maté. Sugar refining, flour and rice milling, and the production of cheap textiles, shoes, leather goods, soap, furniture, matches, cigarettes, foodstuffs, etc., are carried on for the domestic market.

Foreign Trade. Imports in 1938 were equivalent to \$9,873,000 (\$8,500,000 in 1937); exports, \$9,001,000 (\$8,270,000). Argentina supplied 37.9 per cent of the 1938 imports, Japan, 16.2; Germany, 11.4; United Kingdom, 9.6; United States, 9.4. Of the exports, Argentina took 25 per cent "in transit" and 21.4 per cent for consumption, Germany 14.2, United Kingdom 13, and the United States 12.3 per cent. Ginned cotton, quebracho extract, and cattle hides accounted for 65 per cent of the total exports in 1937.

Finance. For the year ended Aug. 31, 1938, actual revenues were 2,589,765 gold pesos and 861,802,000 paper pesos; expenditures, 3,242,426 gold and 1,075,007,000 paper pesos. The external debt on Dec. 31, 1937, was 7,910,048 gold pesos; consolidated internal debt, 3,343,641 gold and 51,007,824 paper pesos; floating debt, 103,540 gold and 71,143,000 paper pesos. Average exchange rate of Paraguayan gold peso, \$0.6866 in 1938 (\$0.6854 in 1937); of paper peso, \$0.00426 (\$0.005 in 1937). See *History*.

Transportation. In 1939 there were about 713 miles of railway lines, 4009 miles of roads, and air lines connecting Asunción with Buenos Aires and Rio de Janeiro. Asunción, which is 950 miles from the sea, is accessible to vessels of 12 foot draft at all times of the year. In 1937 4503 steam vessels of 251,331 tons entered the port of Asunción.

Government. The Congress of 20 Senators and 40 Deputies elected Sept. 25, 1938, was composed entirely of Liberals as the opposition National Republican (Colorado) party boycotted the polls. On Oct. 11, 1938, Congress elected Provisional President Felix Paiva as constitutional President to serve until it called a new general election. The Constitution of 1870, suspended following the military revolt of Feb. 17, 1936, had not been restored up to the beginning of 1939. The state of siege that had been in effect almost continuously since the outbreak of the Chaco War in 1932, was extended for an additional four months in November, 1938. For developments in 1939, see *History*.

HISTORY

Estigarribia Elected. The political confusion that had reigned in Paraguay since the overthrow of the Ayala Government by the military revolt of Feb. 17, 1936, appeared to have been ended, at least for a time, by the election of Gen. José Félix Estigarribia as President on Apr. 30, 1939.

There was another obscure political crisis after the executive committee of the dominant Liberal party on January 4 convoked a national convention to select the Liberal candidate for the Presidency (see 1938 YEAR BOOK, p. 570 for background). On January 18 Col. Arturo Bray, who had exercised a military dictatorship on behalf of President Paiva, resigned as Minister of Interior. Shortly afterwards he left Asunción for Buenos Aires "for reasons of health." Resignations of Finance Minister Enrique Bordenave and Minister of Justice Juan F. Recalde were announced March 12. On March 29 the Liberal convention nominated Estigarribia and Luis A. Riart for President and Vice President respectively.

The National Republican (Colorado) party again boycotted the elections, asserting that "there are no liberties in Paraguay today and the rights of her citizens are not respected." Consequently Estigarribia and Riart were the only candidates in the election of April 30. General Estigarribia, who was commander-in-chief of Paraguay's victorious armies during the Chaco War and was serving as Minister to Washington at the time of his election, obtained 101,127 out of about 150,000 votes cast. He received a tumultuous welcome from 50,000 persons upon his arrival in Asunción on July 10 and was inaugurated for a four-year term on August 15.

United States Credits. In the period between his election and inauguration, General Estigarribia succeeded in negotiating a series of important economic and other agreements with the United States and Argentina that provided a base for his program of national rehabilitation.

Paraguay was in a desperate financial situation as a result of the Chaco conflict, which cost the republic an estimated \$10,000,000, and the ensuing irresponsible and extravagant military governments. Large outstanding debts remained unpaid, while successive budget deficits and the progressive depreciation of the Paraguayan peso made it

impossible to obtain further loans or credits from the usual sources.

On April 21 the Paiva Government concluded an important treaty with Bolivia providing for joint Paraguayan-Bolivian exploitation of part of Bolivia's oil exports (see BOLIVIA under *History* for details). In May one of the German agents sent to Bolivia to carry out the German-Bolivian barter agreement sought to bring Paraguay into the German barter system with a somewhat similar proposal. As agent of important German industrial concerns, he offered to carry out a public works and industrial development scheme desired by the Paraguayan Government. Payment was to be made through a surtax on petroleum products handled by the projected Paraguayan petroleum monopoly over a 25-year period. The scheme called for construction of an automobile highway from Asunción to the Brazilian frontier at Iguazu Falls and the establishment of tobacco factories and other industrial plants using products grown in the region to be opened up by the highway.

The Paraguayan Government rejected this offer in favor of financial aid proffered by the United States Government. Through an exchange of notes between General Estigarribia and Secretary of State Hull on June 13, the U.S. Export-Import Bank agreed to extend credits up to a maximum of \$500,000 to Paraguay for the purpose of checking the depreciation of the Paraguayan peso and liquidating commercial obligations to United States citizens. The Export-Import Bank also agreed to extend additional credits—later fixed at \$3,000,000—to finance the Paraguayan public works program. The first credit of \$500,000 was to expire on June 30, 1941, and advances made under it were to be repayable quarterly and carry an annual interest rate of 3.6 per cent. The second credit was to mature over a period of seven years, with interest at 5 per cent annually.

The Paraguayan Congress passed bills authorizing acceptance of both of these credits in September. It was stipulated that the \$3,000,000 credit be used to engage a United States company to construct a highway from Asunción to Villarrica (first stage of the Asunción-Iguazu road), sanitation works in Asunción, and minor port works. Repayment of both credits was to be made through issuance of 5 per cent bonds, the interest and amortization on which was to be met through import taxes on gasoline and other substitute inflammables, highway tolls, and other imposts on those using the public works after their construction.

General Estigarribia while in Washington also contracted for the services of a United States banking expert to transform the Bank of the Republic into a Central Bank. Earlier in the year Harold D. Gresham of the U.S. Tariff Commission was sent to Paraguay to act as adviser to the government in tariff and related matters.

Agreements with Argentina. En route from Washington to Asunción, General Estigarribia stopped for several weeks of negotiations with Argentine officials in Buenos Aires. As a result six treaties were signed by the Argentine and Paraguayan Foreign Ministers on July 5 (see ARGENTINA under *History* for details). These agreements eliminated several controversial issues endangering the relations between the two republics (see 1938 YEAR BOOK, p. 570). According to sentiments expressed in the Paraguayan

Senate, the establishment of a branch of the Bank of the Argentine Nation in Asunción, called for in one of the treaties, was expected to stimulate Paraguay's economic development and aid efforts to stabilize its currency.

Brazil in Paraguay. Argentina, which dominates Paraguay economically, was undoubtedly spurred into further measures of economic collaboration by the interest displayed in Paraguay by both the United States and Brazil. On June 25 a Brazilian-Paraguayan treaty for the promotion of their mutual commercial and cultural relations was signed in Rio de Janeiro. It called for the establishment of Brazilian banking agencies in Paraguay, construction of a railway connecting Asunción and the Brazilian capital, etc. According to the railway agreement, Brazil was to construct a line in the State of Matto Grosso from Campo Grande to Ponta Pora on the Paraguayan border (155 miles) and a branch line to Bella Vista in the same State (56 miles). The Paraguayan Government was to extend the Concepción-Horqueta railroad to Pedro Juan Caballero opposite Ponta Pora (93 miles), with a branch line to Bella Vista, Paraguay, which is directly opposite Bella Vista, Brazil.

Relations with Bolivia. While in Buenos Aires General Estigarribia had an interview with the Bolivian Foreign Minister, Alberto Ostria Gutiérrez, and lent every support to the Bolivian-Brazilian rapprochement. See BOLIVIA under *History*.

Other Developments. Late in May the Paraguayan Government dispatched several notes demanding the release of the Paraguayan chargé d'affaires in Burgos, who had been arrested by General Franco's police. The Franco Government complied. Early in January the Paraguayan Government cancelled all immigration permits issued since the end of November. The result was that some 500 Jewish refugees from Germany and Italy en route to Paraguay were stranded at Montevideo. The Paraguayan National Land Colonization Bureau refused to admit any immigrants who were not farmers. Alleged anti-democratic and anti-Paraguayan activities among some colonists were said to have influenced the government's attitude.

See URUGUAY under *History*.

PARAPSYCHOLOGY, OR PSYCHICAL RESEARCH. Extra-sensory perception (ESP) has continued through 1939 to dominate the attention of experimental investigators in the field of psychical research. Significant advances in methods have been made, primarily in the direction of security and substantiation, but also in the direction illuminating the nature of the process. Reports of significant results in ESP tests under extraordinarily guarded conditions have been reported by Murphy and Taves of Columbia University and by Pratt and Woodruff of Duke University, both reports appearing in the *Journal of Parapsychology*.

The year 1939 has also seen a very marked decrease in the number, vigor, and relevance of criticisms of the ESP research, and there has been, during the same time, a noticeable increase in the number of psychologists who accept the problem of ESP as one for experimental investigation in the psychological laboratory. For example, a symposium on extra-sensory perception was scheduled by the Southern Society for Philosophy and Psychology for its April meeting, and several papers were read which were favorable to

the hypothesis of ESP with discussion predominantly constructive in nature. Also, several recent psychology texts and laboratory manuals have included references to the ESP problem.

Murphy and Taves, mentioned above, found from an analysis of their results that subjects tended to vary in the same direction on different tests when given a four-part ESP task to perform at a single experimental session, which indicates that some extra-chance factor influences the subject's choices, even when the total deviations are within the range expected by chance. Pratt and Woodruff found that novelty introduced into the experimental situation (in the form of different sizes of symbols) enhanced the scores of their subjects, even though size differences per se were not important. Hettinger reports positive conclusions concerning experiments under the title of "ultra-perceptive faculty" in which he has evaluated, by statistical methods, statements of "sensitives" (mediums) in tests that are commonly known as "psychometry." Perhaps the significant point about this work is the fact that it was accepted as a Ph.D. thesis by the University of London.

Whately Carington, in England, has continued his study of personality identifications in mediumship and has published further advances in methodology. In the field of mathematical and statistical research, which has been stimulated by the work in ESP, the contributions of J. A. Greenwood of Duke University and T. N. E. Greville of the University of Michigan are outstanding.

The most sweeping attempt thus far made to place the phenomenon of extra-sensory perception in the order of the universe has been published during the year by the philosopher, O. L. Reiser (Pittsburgh). His rational treatment embraces the conceptions of emergent evolution, non-Aristotelian logic, and that of a psychic ether. Clairvoyance and telepathy are, according to this theory, emergents in the evolution of a "world mind" or psychic continuum analogous to the physical energy field.

Parapsychology suffered a very great loss in the death of William McDougall late in 1938. Professor McDougall was largely responsible for the present status of ESP research as a university study, having sponsored research in this field at Harvard and at Duke.

Several books have appeared in the year 1939 which are directly concerned with psychical research. One of the most readable books is by Dr. Charles Francis Potter entitled *Beyond the Senses*, a survey of the author's life work and opinions. The *Journal of Parapsychology*, an organ dealing with experimental findings in ESP, is now being edited by Gardner Murphy of Columbia University and Bernard F. Reiss of Hunter College.

J. B. RHINE.

PARENTS AND TEACHERS, THE NATIONAL CONGRESS OF. A national welfare body organized on Feb. 17, 1897, in Washington, D. C. The co-founders were Mrs. Theodore W. Birney and Mrs. Phoebe H. Hearst, both of Washington. The original name was "National Congress of Mothers." In 1908 the name was changed to "National Congress of Mothers and Parent-Teacher Associations," and again was changed to "National Congress of Parents and Teachers" in 1924. It functions through approximately 27,000 local

parent-teacher associations in urban and rural communities in every state, District of Columbia, Hawaii, and Alaska.

The local parent-teacher association has a three-fold purpose: To know the child through child study and parent education; to co-operate with the schools and other educational agencies in his training, through shared participation with teachers and educators; and to control and build his environment through the development of public opinion and civic activity.

The Congress membership as of Apr. 15, 1939, was 2,291,420. Persons interested in child welfare become members of the National Congress by joining a Congress parent-teacher association. The annual dues for membership in the National Congress is five cents. The life membership fee is \$50.

The P.T.A. is founded on the premise that the community itself is the true school of youth, and that all activities of the community tend to modify the development of children and young people. The P.T.A. capitalizes on all community institutions and sentiments that tend to improve the environment of children.

Because the objects of the organization are broad enough to cover practically all needs and interests of American children and youth, the program of work of the P.T.A. has been very flexible through the years. The fields covered include civic welfare, health, education, and family relationships.

The Congress publishes many books, leaflets, pamphlets, bulletins, and other publications on subjects of major interest to its local associations. The annual *Proceedings* and *Parent Education Yearbooks*; leaflets on organization and standing committee subjects; the *Parent-Teacher Manual*; and the monthly *National Congress Bulletin* are among the most widely used publications of the Congress. The *National Parent-Teacher* is its official magazine.

The Congress holds an annual convention in the spring to which its state branches send delegates. Reports and papers of permanent value presented at these meetings are included in the *Proceedings* of the Convention. The Board of Managers, composed of selected officers, chairmen of standing committees, and presidents of state branches, meets semi-annually.

The National Office of the Congress is located at 600 South Michigan Blvd., Chicago, Ill.

PARK, WILLIAM HALLOCK. An American bacteriologist, died in New York, Apr. 6, 1939, where he was born Dec. 30, 1863. Educated at the College of the City of New York (A.B., 1883), the College of Physicians and Surgeons, Columbia University (M.D., 1886), and in Vienna (1889-90), he joined the faculty of University and Bellevue Hospital Medical College, New York University in 1897, becoming Herman M. Biggs Professor of Preventive Medicine in 1933. Three years previously, he joined the New York City Board of Health. In 1937 he was retired as emeritus.

His most notable researches were carried out in the field of public health, and it was he who, in 1893, organized the first public health laboratory in New York City. The new laboratory, dedicated in 1936, was named in his honor. An outstanding specialist in the field of anti-toxins, his greatest success was with the diphtheria anti-toxin, which he developed in the early 1890's. His name was also associated with the bacteriology of milk control, the influence of pasteuriza-

tion on the health of infants, the epidemiology of influenza, pneumonia measles, poliomyelitis, and scarlet fever. He was an early advocate of the germ theory of contagious diseases and his long and faithful campaign against diphtheria may well be called his monument.

Dr. Park was not without honor in his own country. Upon reaching the retirement age in 1933, the City Government was prevailed upon to retain his services, and he was awarded the Sedgwick Medal of the American Public Health Association in 1932, which called him the "American pasteur"; the Public Welfare Medal of the National Academy of Sciences in that same year; the Townsend Harris Medal of the College of the City of New York (1933), the Roosevelt Medal (1935), and the George M. Kober Medal of the Association of American Physicians (1937).

After 1914, Dr. Park was consulting bacteriologist of the N. Y. State Department of Health; after 1917, medical examiner in bacteriology, and after 1921, consulting bacteriologist of the U.S. Quarantine Service. He served as president of the American Public Health Association in 1923, and besides contributions to the scientific press, was the author of *Pathogenic Microorganisms* (10th ed., 1933); *Public Health and Hygiene* (2d ed., 1927), and *Who's Who Among the Microbes* (1929).

PARK COLLEGE. A nonsectarian institution for the higher education of men and women at Parkville, Mo., founded in 1875 and co-operating with the Presbyterian Church in the United States of America. The enrollment for 1939-40 totaled 509; the faculty numbered 45. Endowment funds totaled \$1,300,000, from which the income was \$46,000. Tuition and fees amounted to \$138,000; donations to \$30,000, and the grounds, buildings, and equipment were valued at \$1,500,000. The library contained 30,769 volumes. President, William Lindsay Young, D.D., LL.D.

PARKS, NATIONAL. See NATIONAL PARK SERVICE.

PAROLE. See PRISONS, PAROLE, AND CRIME CONTROL.

PATENT DUCTUS ARTERIOSUS, SURGICAL TREATMENT OF. See MEDICINE AND SURGERY.

PATENT OFFICE. Legislation recommended and drafted by the U.S. Department of Commerce and the U.S. Patent Office, to effectuate significant improvements in the patent system was enacted by the U.S. Congress in 1939 and still more important measures having the same purpose are to be considered at the session beginning in January, 1940. The amendatory acts now in effect provided for such changes in the procedure concerned with the examination and issue of applications as will correct abuses which the former statutes failed to prevent or to remedy, and at the same time will reduce the time and lessen the expense involved in obtaining decisions from the Patent Office. Most vital of the bills awaiting Congressional approval is that contemplating the establishment of a single court of patent appeals having jurisdiction throughout the United States and its Territories and virtually final authority in the determination of actions affecting the ownership, validity, and infringement of patents. This court would substitute for the ten appellate courts now having cognizance of such cases. The several measures already passed and those pending were approved by The Temporary National Economic Committee following its in-

vestigation of the patent system and were prompted by the most thorough scrutiny of the patent system undertaken in the last sixty years.

For the fifth time in six years the Patent Office reported a surplus at the close of the twelve months ended June 30, 1939. The average of these annual surpluses was \$135,721. For the ten years prior to July, 1934, the deficits varied from a minimum of \$134,433 to a maximum of \$827,342. The deficit of \$78,364 in 1936 was chargeable to increases in the salaries of a large number of junior examiners. Receipts of the Office in the fiscal year 1939 were \$4,742,617. The expenditures were \$4,615,505.

While the total of applications for patents (including reissues) and for registration of trade-marks, prints and labels filed in 1939 was slightly less than that for 1938 they exceeded the number received in any previous year since 1931. In the latest fiscal period 91,163 such applications were filed. Of these 66,166 were for patents for mechanical, chemical, and other such inventions; 7603 were for designs; 384 for reissues; 14,321 for registration of trade-marks and 2689 for registration of prints and labels. The corresponding figures for 1938 were: Applications for patents, 66,050; for designs, 8014; for reissues, 421; for registration of trade-marks 14,601, and for registration of prints and labels 2932, the aggregate being 92,506.

Patents granted in 1939 numbered 47,473. Of these 5154 were for designs; 52 for plants and 359 for reissues. Registrations of trade-marks and of prints and labels were respectively 10,591 and 2315. In 1938 there were issued 36,672 patents for inventions; 28 for plants and 5142 for designs. The reissues of patents numbered 343. In the same twelve months 5776 patents were issued to citizens of 56 foreign countries and their dependencies.

Litigation within the Office included 1232 interferences declared in patent cases and 95 interferences, 1140 oppositions and 147 cancellations instituted as to trade-marks. There were 4399 appeals to the Examiners-in-Chief. The miscellaneous activities of the Office included the receipt, disposition and indexing of 482,120 letters; the sale of 4,041,895 copies of patents; the typing of 3,063,700 words for the public; the furnishing of 1,011,874 photostats and 59,751 photographic copies of records, etc. The average number of employees of the Office in 1939 was 1355. Of these 693 were in the professional corps and the others in the clerical and custodial service. The salaries of the officials and employees totaled \$3,534,851.

CONWAY P. COE.

PEACE. An American Union for Concerted Peace Efforts was organized in Washington to carry out a three point program: To oppose aggression; to promote international justice between nations; to build adequate machinery for peace. It was attended by representatives of church, press, radio, educational, and labor organizations. The first work decided upon by the conference was to organize National Peace and Security Week, April 26 to May 3, to mobilize public opinion in opposition to any further aid to aggressors by the United States. The Peace and Security Week Committee, headed by Donald Richberg and Mrs. Henry F. Grady, included the Rt. Rev. G. Ashton Oldham and Dr. Henry A. Atkinson, of the World Alliance, Dr. Charles G. Fenwick of Bryn Mawr, William Green of the American Federa-

tion of Labor, Senator Claude Pepper, of Florida, Dr. James T. Shotwell, of the Carnegie Endowment for International Peace, Miss Josephine Schain of the National Committee on the Cause and Cure of War, and other prominent public leaders.

Fourteen pacifist groups were united into a "permanent strategy and co-ordinating committee" for the purpose of unifying all pacifist activities throughout the country in February in Washington. The groups unanimously resolved to revive the war referendum, the protest against the May bill, to congratulate the C.I.O. for its opposition to the bill for industrial mobilization, and to organize co-operative farms which would provide for the families of conscientious objectors in case of war. It was pointed out that the "war to end war" had brought about militarism, and the "war to make the world safe for democracy" had been followed by dictators. Among the pacifist groups represented at the conference were Labor Temple, War Resisters League, Pax Group (Roman Catholic), Student Peace Service, Fellowship of Reconciliation, Universal Peace League, Committee on Militarism in Education, Bronx Free Fellowship, Biosophical Institute, Youth Committee for the Oxford Pledge, Women's Peace Union, Women's International League for Peace and Freedom, American Friends Service Committee, and the Catholic Worker.

Pleas for an international conference for justice and peace, analysis of the difficulties to be met and a development of an agenda for such a conference characterized the Thirteenth Annual Meeting of the Roman Catholic Association for International Peace in Washington, April 10-11. The sessions of the conference were given over to presentation of papers for the Ethics, International Law and Organization, National Attitudes and Joint Policy Committees of the Association. Panel talks and discussion from the floor followed each Committee address. The proposal for an international conference was made for the Ethics Committee at the opening session of the Conference by the Rev. Charles C. Miltner, C.S.C. of the University of Notre Dame, Notre Dame, Indiana. "Although the outlook for international peace at the present moment is disheartening and war seems inevitable," Father Miltner declared, "now is the time when an international conference is not only necessary but desired by many." A conference to consider particularly the problems of economic justice, was called for in charity and social justice.

Six points were proclaimed, by the British Labor Party, as essential. They were: (1) No dictated Peace; (2) recognition of the right of each nation to develop its characteristic civilization; (3) complete abandonment of armed force as an instrument of policy; (4) recognition of the rights of national, racial, and religious minorities; (5) recognition of an international authority superior to the individual states; (6) abandonment of Imperialism . . . there must be equal access for all nations to markets and raw materials.

The British National Peace Petition reached its climax on Saturday, March 18, in the Queen's Hall, London. It appealed "for a New Peace Conference." Two days later, on March 20, the Prime Minister received at the House of Commons an influential deputation representing the signatories to the Petition. It was signed by 1,062,000 people. The petition read:

We, the undersigned, believing that permanent peace cannot be secured by competitive armaments, through sac-

rifices imposed upon small nations, or by exclusive arrangements between groups of major Powers, but only through a more fundamental and general settlement, urge the necessity for the holding of a New Peace Conference open to all nations and directed towards remedying the economic and political conditions likely to lead to war; and pray His Majesty's Government to take, in consultation with the President of the United States of America, the necessary steps to secure the holding of such a Conference, after adequate preparation, and to offer the fullest collaboration of this country in bringing the negotiations to a successful issue.

More and more the radio is coming into its own as an educational aid for world peace. Groups as well as individuals are finding broadcasts on world affairs a valuable basis for study and discussion. The Town Meeting of the Air, presented on Thursday evenings over the blue network of the National Broadcasting Company, is familiar to millions. Likewise, the University of Chicago Round table, held on Sunday afternoons is heard by large audiences.

The Foreign Policy Association has put on a series of talks entitled "America Looks Abroad" on Sunday afternoons. The Commission to Study the Organization of Peace has inaugurated a Sunday evening program. Dr. Shotwell, Chairman of the Commission, acts as master of ceremonies and specialists on various phases of international relations state their views. A student Round Table discussion on the basis of peace, under the same auspices and beginning on the same date, is heard on Saturday afternoons. In this way large audiences are reached with peace arguments who were heretofore untouched.

In December, 1939, the anniversary of the signing of the Treaty of Ghent, which brought the War of 1812 to an end, was observed. For 125 years, the United States has been at peace with Canada. For nearly a century and a quarter the 3000 miles of border between the United States and her northern neighbor have been unfortified. For four generations the keystone of Canadian-American relations has been co-operation and good-will. The Committee on Relations with Canada urged that churches throughout the country remember this victory of peace in their services on one of the latter Sundays in December. Cardinal Villeneuve, Archbishop of Quebec, said, "Let us be grateful to God for such friendly feeling and let us hope that they may ever continue."

The peace exhibit at the Golden Gate International Exposition was one of the most timely and effective of the Fair's projects. Focal point of the project was a 30-ft. prismatic glass "Peace Beacon," which housed the display of colored transparencies showing productive activities in a peaceful community and positive ways to peace action. The visitor as he looked at this display, heard the "Voice of Peace," but only after passing through the war exhibit in a dimly lighted room where war movie flashes were shown, together with transparencies illustrating the cost of war in life and property.

A Trujillo peace prize of 50,000 pesos was established in the Dominican Republic by a law signed by President Peynado. It will be awarded annually to "individuals, societies, associations, or organizations that have most notably worked for the re-establishment or strengthening of peace between nations or for the spread or development or positive consecration of the principles or doctrines on which such peace is based." In addition to the money, individuals will receive a gold medal and a diploma, while organizations will be given a bronze plaque and a diploma.

The Wateler Peace prize was founded in 1931 by J. G. D. Wateler, Netherlands banker, who willed a sum to the Carnegie Institute which administers the Hague Peace Palace. From the revenues of this sum (about 9500 florins or \$9000) an annual prize is awarded alternately to a Netherlander or a Netherlands society and to a foreigner or foreign society. In 1939, the directors of the Foundation announced an award of the Wateler Prize to the American Friends Service Committee and the Friends Service Council, London, for their assistance to those suffering in various parts of the world.

Judge Michael Hansson, director of the Nansen Office for Refugees in Geneva, received the £8500 Nobel Peace Prize on behalf of his office at a ceremony at the Nobel Institute at Oslo on December 10. The Nansen Office is to be merged at the end of this year with the International Commission for Refugees in London. The New High Commissioner will be Sir Herbert Emerson.

See LEAGUE OF NATIONS; WORLD COURT.

CLINTON ROGERS WOODRUFF.

PEACHES; PEARS. See HORTICULTURE; ENTOMOLOGY, ECONOMIC.

PEMBA. See ZANZIBAR PROTECTORATE.

PENAL LAW. See LAW.

PENANG. See STRAITS SETTLEMENTS.

PENDERGAST, THOMAS J. See MISSOURI.

PENITENTIARIES. See PRISONS, PAROLE, AND CRIME CONTROL.

PENNSYLVANIA. Area and Population. Area, 45,126 square miles, exclusive of State's waters in Lake Erie, but including (1930) other waters, 294 square miles. Population: Apr. 1, 1930 (census), 9,631,350; July 1, 1937 (Federal estimate), 10,176,000; 1920 (census), 8,720,017. Philadelphia (1930) had 1,950,961 inhabitants; Pittsburgh, 669,817; Scranton, 143,433; Reading, 111,171; Harrisburg, the capital, 80,339.

Agriculture. Pennsylvania's farms harvested, in 1939, 6,217,400 acres of principal crops. Nearly four-fifths of this acreage was in hay, wheat, and corn. Tame hay, on 2,406,000 acres, totaled 2,658,000 tons (estimated farm value, \$31,099,000); wheat, 926,000 acres, 19,421,000 bu. (\$15,731,000); corn, 1,368,000 acres, 58,140,000 bu. (\$37,791,000); potatoes, 187,000 acres, 22,440,000 bu. (\$20,196,000); oats, 906,000 acres, 26,274,000 bu. (\$10,510,000); apples gathered for the market totaled 6,100,000 bu. (\$3,965,000); peaches, 2,618,000 bu. (\$2,749,000); tobacco, on 27,200 acres, 36,239,000 lb. (\$4,920,000); barley, 124,000 acres, 3,658,000 bu. (\$1,939,000).

Manufacturing. As shown in 1939 by the U.S. Census of Manufactures covering 1937, totals for Pennsylvania (with figures for 1935 in parenthesis) were: Active manufacturing establishments, 13,084 (12,926); their wage-earners, 954,340 (814,670); wages paid, \$1,176,957,270 (\$816,022,112); value of manufactured products, \$6,032,083,005 (\$4,191,368,642); part of this value contributed by processes of manufacture, \$2,664,410,319 (\$1,870,467,258). The figures evidenced a conspicuous gain over the period from 1935 to 1937: though still behind New York in totals for 1937, Pennsylvania exceeded New York in amount of gains made over that period.

Steel-making, the leading industry, employed 165,952 wage-earners, paid them \$272,636,738, and produced \$1,109,843,763. The manufacture of divers kinds of garments approximated \$383,000,000, to include \$40,947,613 in boots and shoes,

\$116,119,197 in hosiery, and totals in two dozen other classifications. The refining of petroleum produced \$259,696,775. The output of blast furnaces totaled \$229,075,759; electrical machinery, apparatus, and supplies were made to the total of \$207,506,310. The output of miscellaneous machinery, \$94,189,447, was but a fraction of the value of all the machinery produced, such as engines, motor-driven vehicles, and many other lines separately itemized.

Philadelphia numbered, in 1937, 4147 manufacturing establishments, paying 213,851 wage-earners a year's pay of \$257,327,331, and producing goods that amounted to \$1,493,638,124. Pittsburgh had 1046 manufacturing establishments, whose 51,040 wage-earners received \$71,874,182, and which produced \$401,473,349 in goods.

Mineral Production. The total value of the yearly production of the native minerals of Pennsylvania, reported in 1939 as \$599,817,364 for 1937, was below the corresponding total for Texas and above that for any other State of the Union.

The output of bituminous coal dropped sharply, by 30 per cent, to a total of about 77,040,000 net tons for 1938, from 111,002,289 tons, \$228,665,000 value, for 1937. The anthracite mines produced about 46,099,000 net tons of hard coal in 1938, as against 51,856,433 in 1937; by value, \$180,600,167 (1938) and \$197,599,000 (1937). The drop in the anthracite output of 1938 was attributed in part to warmer than average winter temperatures and in part to the competition of other kinds of fuel for the residential consumer. The year's commercial shipments of anthracite, being exclusive of coal used by the collieries, employees, etc., totaled less than the production; for 1938, they came to 41,064,000 tons; for 1937, to 46,203,000. The production of anthracite attained a lower total quantity for 1938 than for either of the depressed years 1932 and 1933. The unauthorized taking of coal by miners working unlawfully for their own gain in companies' property went on unhindered by the authorities. The State's Department of Mines estimated that this illicit output amounted to 2,500,000 tons for 1938.

Production of petroleum diminished to 17,426,000 barrels approximately, for 1938, from 19,189,000 (value, \$49,300,000), for 1937. All the product of the State's wells was of the well-defined Pennsylvania grade, superior for special uses and thus regularly commanding higher prices than ordinary petroleum; the price of the State's product averaged 30 per cent less for 1938 than for 1937, and this depressed both output and the drilling of new wells. The quantity of natural gas produced in Pennsylvania and delivered to consumers there or elsewhere totaled 115,928 million cu. ft. for 1937; the value of this output was \$20,206,000 at the wells and \$41,842,000 at the points where the gas was consumed. Later corresponding figures were not at hand; production for 1938, however, was reported as lower and drilling activity diminished. The output of cement declined at much the same ratio as that for the entire Union; Pennsylvania continued in 1938 to make about one-fifth of the Nation's yearly total of Portland cement, but the quantity of the output decreased to 21,082,966 barrels for 1938, from 22,952,603 for 1937, and the corresponding value to \$28,242,913, from \$31,917,831. Clay products, exclusive of pottery and refractories, amounted in value to \$11,713,891 for 1937. The fabrication of pottery, no longer included in the totals of the State's mineral output as calculated by the U.S. Bureau

of Mines, had attained for 1936 a yearly output in excess of \$19,000,000.

Coke, produced almost wholly from native coal, diminished in yearly output to 7,606,799 net tons for 1938, from 16,260,310 tons (value, \$65,841,452) for 1937. Blast furnaces shipped 4,684,017 gross tons of pig iron (1938) as against 11,036,467 tons in 1937; by value, \$101,266,844 (1938) and \$239,838,942 (1937). Output of open-hearth steel sank to 7,072,157 gross tons (1938) from 14,561,700 tons (1937); that of Bessemer steel, to 348,060 gross tons, from 830,440.

Education. For the academic year 1937-38, the latest covered by the data that follow, Pennsylvania's inhabitants of school age ($5\frac{1}{2}$ years to 18) were reported as 2,201,577. Pupils' enrollments in the public schools numbered 1,909,747; this comprised 1,258,619 in elementary study and 651,128 in high schools. Outside these totals were 35,241 enrollments in kindergartens. Exclusive of tuition paid for students from some school districts, the year's expenditure for public-school education amounted to \$226,945,078. The public schools' teachers, supervisors, and administrators numbered 64,043.

Legislation. The Legislature convened in regular biennial session January 3 and adjourned May 30. The Republican group controlled the Senate by a scant majority and held the House by a lead of 50 votes. Thus composed, the Legislature acted in accord with Governor James on several principal features of the work in hand. These included the revision of the State's methods in the administration of poor-relief, the reduction of expenditure where possible, the adoption of restrictions upon the conduct of organized labor, and the creation of a State agency to foster business and industry. The session failed to carry out James' recommendations for revising the law as to liquor, improving the condition of the ailing anthracite industry, and altering the State's system for the regulation of the price for milk.

Legislation as to poor-relief involved both budgetary appropriation for the next two years' cost to the State and changes in the law as to the recipients and the dispensing organization. The State's payment toward support of the poor in the biennium ended with June 30 approximated \$200,000,000; the appropriation for such payment, to cover the two years thereafter, totaled \$127,440,000, as passed by the Legislature, but only \$120,940,000 as cut down by executive trimming subsequent to legislative action. Apart from this sum, the Legislature voted \$12,000,000 in January, to meet the deficiency in funds for poor-relief prior to June, when the new fiscal year began; this deficiency appropriation resulted from the exhaustion of the money appropriated by the Earle Legislature. Governor James had originally recommended the appropriation, for poor-relief in the coming biennium, of \$128,000,000; in cutting the total to less than \$121,000,000, he was impelled by the need to reduce the budget at the last moment. Dealing with recipients of poor-relief, an act was passed requiring the able-bodied to accept such work as the State government, public bodies, and organized charities might offer, on penalty of being shut off from State support; employers were allowed, likewise, to call upon recipients to work for them, on condition that the pay should attain the rate prevalent for like work at the same place and time. Another act gave the Governor authority to discharge relief workers at the demand of any of the County Assistance Boards

but provided that the vacancies be filled through examinations under the system of civil service.

The biennial budget as passed by the Legislature carried a total of \$376,065,000, after the Governor had vetoed more than \$10,000,000 in items of appropriation. Its three chief heads were: deficits from the previous biennium, \$49,315,000; general appropriations, \$168,081,000; special aid for the poor, institutions, etc., \$158,669,000. Outside the budget, expenditures from specially assigned revenues were expected to bring the State's outgo for the two years up to \$500,000,000 or higher. Appropriations as finally approved brought the expenditures into approximate balance with the estimated applicable revenues and thus fulfilled one of the main objects of the James administration. Grave doubt, however, was expressed at the time, as to whether the State could reduce the cost of poor-aid sufficiently to obviate supplementary appropriation within the two-year period.

The Republican administration's purpose of creating no new taxes was fulfilled. All idea of abolishing major taxes bequeathed by the Earle administration, however, was abandoned. The eight special taxes that it had created as temporary expedients, to produce about \$81,500,000 a year, were accordingly re-enacted. In the order of the size of their yields these taxes were: corporate net-income tax, at 7 per cent; emergency gasoline tax, at 1 cent a gallon; personal-property tax, at 4 mills on the dollar; cigarette tax, at 1 cent on ten; sales tax on liquor, at 10 per cent of price; additional tax on public utilities' gross receipts, at 8 mills; on banks' and trust companies' shares, an additional 4 and 3 mills, respectively.

The session's labor-relations act amended the like-named State act of 1937 in a manner most important to industry and to the social structure. The earlier act had given employees' organizations, in matters within the State's jurisdiction, special rights before a State Labor Board, similar to rights before the NLRB, given by the Federal Labor Act with regard to the field of Federal jurisdiction. The State act of 1939 extended to employers rights in many respects balancing those already given employees' organizations. In particular, the State Labor Board was required to investigate labor disputes on the employer's petition; the seizure of the employer's premises was forbidden; an employee was forbidden to coerce another into joining a union or to coerce an employer into granting employees' demands; the check-off, or payment of employee's dues to a labor union by the employer, directly, as a deduction from the pay envelope, was made unlawful unless authorized by a majority of the employees and, further, allowed by each affected employee in writing; craft unions within an industry were specifically allowed to choose their own agents for bargaining with employers. The anti-injunction act of 1937 was amended in much the same spirit, to allow State courts to enjoin when a valid labor contract had been violated, when a striking union lacked a majority of the employees, and when employees seized or damaged property. Both the labor measures went through past strong laborite protest.

While little in favor of most of the works of the outgoing Democratic regime, the Legislature carried out a task started by the crime commission that Governor Earle had appointed. This commission recommended giving the State a uniform system, under a single board, for the paroling of offenders. Accordingly the State Parole Board

was created, to have five members appointed by the Superior Court, and to give supervision to the paroling of prisoners in all State and county institutions, with one exception; the existing Board of Pardons was to retain its jurisdiction over the cases of those convicted of murder. In the field of the civil service, a Civil Service Commission was created, to co-ordinate the separate authorities regulating the selection and protecting the employment of workers in the Department of Public Assistance, the system of liquor control, and the unemployment-compensation offices. For school districts in particular distress for money, a special appropriation of \$3,000,000 was made; the big school districts were authorized to issue 10-year bonds for the means to continue operating, and to the amount of uncollected current taxes. The age at which teachers in public schools must retire was made to diminish yearly, from 70 years in 1939, to 62 years, the limit in and after 1947. Bills favored by the State Medical Society and passed by the Legislature laid a legal foundation for the establishment of non-profit-making medical corporations that would supply the service of salaried physicians to people of low income out of payments made by these at a low monthly rate when in health. Acts like those already on the books in many other States were passed to require applicants for marriage licenses to undergo tests for syphilis and to require tests for the same purpose in cases of pregnancy. Laws inspired by recent proceedings against the outgoing Democratic regime included an "anti-macing" act sponsored by Governor James. To mace, in Pennsylvanian parlance, is to extort by political influence, as from a jobholder; the act made political organizations' demands for contributions from public employees and recipients of poor-relief unlawful. Acts passed by the special session of the previous Legislature in 1938, to prevent a grand jury's investigation of Governor Earle's regime, were repealed. The registration of aliens was required (see IMMIGRATION AND EMIGRATION).

A great part of the attention of the session was given to Philadelphia. The draft of a new charter for the city, submitted in 1938, came before the legislators by way of several bills, none of which achieved passage. The rate at which the city must pay off its accumulated deficit was reduced by enactment to \$2,500,000 a year, from \$5,000,000. The President of the City Council was made the lawful successor of the Mayor in case of vacancy; the successor designated in 1937, the City Controller, was thus eliminated in favor of a Republican officer. Back pay, withheld by the city since as early as 1932, was made payable in 1940, at an average of \$144 to each man, to some 7000 police and firemen.

Political and Other Events. Arthur H. James, who took office as Governor on January 17, had adequate Republican support in the Legislature and was in a position to take many needful steps to rid the State government of excessive expenditure and bring it out of the troubles left by the Earle administration. In his inaugural address he promised economy, undertook to make the State live within its means, and asked general co-operation in the task of taking care of the State's indigents. He replaced with his own appointees the members of a number of administrative bodies, including the Department of Assistance and the Delaware River Commission's three Democratic members. Insisting that the Public Utility Commission reduce its budget for the cur-

rent period to end with May 31, he cut off the commission's authority to draw on State funds in order to force its compliance. By revising the plan of road construction he sought to effect more extensive employment of indigents receiving public support on work in this field; he suspended work on the construction of an expensive "escape-proof" State prison at Mount Gretna. By various means he reduced the number of those on the State's payroll by an estimated 2538 up to the end of August, in those of the State's departments over which he had control; this saved \$3,701,379 out of an annual payroll of \$21,241,005; the sum constituted only a small part of the State's annual expenditure, but the reduction was considerable in relation to the total.

The Tax Problem. A report on the State's situation as to taxes was rendered (March 13) by the Industrial Tax Survey Committee (Dent Committee), a body created in 1937 by the Legislature to study the subject. The report denied that conclusive evidence had been found to show that the disquieting tendency of industrial establishments to remove from the State resulted from oppressive taxes, but it found that existing taxes retarded the expansion of industry; it recommended the creation of a State Tax Commission to replace the Department of Revenue and shape permanent and consistent policies, the granting of relief to ailing industries, reduction of the tax on invested capital, restriction of the tax per ton of coal for workmen's compensation in the mines, the radical reduction of the rates of taxation on personal property and on capital stock, and the creation of a graduated tax on incomes. No statement was made as to the taxing record of the Earle administration.

Prosecution of Ex-Officials. District Attorney Carl B. Shelley of Dauphin County had brought before a grand jury at Harrisburg, in 1938, matters relating to the conduct of several of Governor Earle's chief subordinates. The grand jury's inquiry continued into 1939. It brought forth indictments (March 9) charging ex-Secretary of Highways Roy E. Brownmiller with misusing highway funds to pay people in Luzerne County just before the election in the previous November; ex-Secretary of the Commonwealth David L. Lawrence, with "macing," extracting contributions from State employees through divers forms of pressure; and ex-Secretary of Labor Ralph M. Bashore, with the like offence. Other indictments found against Lawrence (January 7) had to do with the State's purchase of 57,000 tons of gravel from a firm in Erie and Warren counties. Brownmiller, tried in Dauphin County, was found guilty (June 25) of fraudulent use of State funds in connection with the payroll in Luzerne County; he was sentenced to serve a year in prison and pay a fine of \$3000 and took appeal to the State Superior Court. Separate but related indictments brought against him in Luzerne County were dismissed for technical imperfections, after considerable delay, and redrawn. In the original trial ex-Governor Earle testified that he had not approved a transfer of \$1,025,337 from the motor-license fund to meet the cost of the alleged payroll-padding in Luzerne. Another witness indicated that the effort had been to add 12,000 to the payroll there, shortly before the November election. Lawrence was tried for conspiracy and blackmail, upon charges related to the Erie gravel dealings. He was acquitted of these charges on December 8.

Social Problems of the State. The difficulty of meeting the cost of poor-aid continued to provide the most pressing social problem. The number of "cases" (commonly families) listed as receiving this aid tended to increase during the first half of the year; the total for July, 279,548, exceeded that for June by nearly 6 per cent and that for July, 1938, by 20.9 per cent. In part this rise resulted from the WPA's discharge of clients, who then came to depend on State aid. Rapid acceleration in some of the chief industries, attending the outbreak of European war in September, took care of some of the dependents. It thus helped Governor James put off the calling of a special session, needful as soon as the exhaustion of the appropriated means at hand should threaten the recipients with loss of support. Effort was made, in accordance with statutory provision and with the Governor's policy, to connect the more capable dependents with public work where possible. James, in letters to Administrator Harrington in December, charged the WPA with having skimmed on Federal dispensations in Pennsylvania since the incoming of the Republican regime.

The cause of medical insurance was advanced when the Medical Service Association of Pennsylvania offered (August 12) for the approval of the State's insurance authorities a schedule of proposed rates; these set the cost of the medical services offered by the Association at \$2.50 a month, whether needed or not, for single individuals; \$4.50, for husband and wife, both; and \$1 a month for each additional member of the family. The State Medical Society approved and furthered the enterprise; there was expectation that the service would begin early in 1940.

Courts' Decisions. The State Supreme Court upheld (September 25) the validity of the State's tax on the franchises of non-resident corporations to do business, a lucrative tax that the Dauphin County Court had some months before declared unconstitutional, to the prospective embarrassment of the State by the loss of millions in anticipated revenue and the prospect of having to restore \$26,000,000 previously collected. On the other hand, the Supreme Court ruled (June 19) that the tax on chain stores was invalid; it held unconstitutional parts of the workmen's compensation law, recently added, forbidding that a workman's disobedience of orders or regulations should bar him from compensation if hurt, denying credence to anything favorable to the employer that an employee had said within 12 hours after being hurt, and otherwise handicapping defense against claims; it permitted the holding of elections in individual counties, on the question of local option, although the liquor act of 1937 had encumbered permission therefor with a peculiar limitation by calendar that would apparently have prevented any such election before the year 2000; it affirmed the power of the Board of Public Education, of Philadelphia, to reduce salaries of teachers by nearly \$8,000,000 for the year, to the minimum rates set by statute; it dismissed (January 11) the appeal of 205 employees of the leather-manufacturers McNeely and Price, Inc., from a permanent injunction issued against them by a lower court in connection with their seizure and occupation of the employer's premises.

The U.S. Supreme Court decided (February 27) the Fansteel Metallurgical Corporation case, the most prominent of the suits arising from the seizures of premises by strikers in Pennsylvania during the violent strikes of 1937; its decision

(see SUPREME COURT) condemned as lawless the practise of such seizures and upheld a lower court's denial of the right of the NLRB to compel the company to re-employ all the offenders. A Federal Circuit Court's decision (November 29) in a case of the Apex Hosiery Company for damages on account of strikers' seizure of the plant, set aside judgment, by a lower court, for \$711,932 in treble damages.

The contest of 50 railroad companies against the full-crew law enacted in 1937, during Earle's governorship reached a decision in the Dauphin County Court, to which it had been recommitted by the State Supreme Court; this decision (March 15) held the law incompatible with the State constitution and not substantially promotive of safety; the enforcement of the law was permanently enjoined. The decision, on appeal, was upheld by the State's Supreme Court (November 27). See PRISONS.

Events in Philadelphia. Mayor S. Davis Wilson died on August 19. Indictments standing against him at the time of his death had been found by a grand jury called in 1938 by Judge Bok to investigate vice and gambling. Judge McDevitt dismissed them a few days after Wilson's death, declaring that they nowhere charged bad faith or corruption. The City Council selected one of its members, George Connell, to succeed Wilson, despite a provision in the city charter, disqualifying a Councilman from becoming Mayor during the term for which he had been elected to the Council. As Wilson's elected successor the vote cast at the election on November 7 chose Robert E. Lambertson (Rep.) by a small plurality. Both Connell and Mayor-Elect Lambertson helped speed the Councils' creation, in December, of a tax to overcome the deficit in the city's budget for 1940. This impost levied 1½ per cent on gross earned incomes—mainly, on wages and salaries.

For several months early in 1939 the city, bound by its charter to make no expenditures until the budget for the year had been balanced, struggled to keep the public services going. The city had to seek orders from the State Supreme Court on successive occasions from January until July, allowing it to pay its employees. During this time the City Council, having bowed to the popular disfavor backing the Mayor's veto (January 7) of a 3-per cent sales tax, endeavored to pave the financial way ahead for a time by the sale, for a sum in hand, of the rents to come from the municipally owned gas works. The State Supreme Court decided (March 24), in a preliminary proceeding, that the city could lawfully sell these rents, which came to \$4,200,000 a year. A contract was made under which the city received, July 31, \$41,000,000 and granted in return 12½ years' rents from the gas works, and if needful, the rents of 18 years; the RFC advanced half of the money; the rest came from a group of banks. Most of the lump sum received was due on a debt of \$34,000,000 approximately, the accumulation of a series of yearly deficits.

Frank A. Craven, former deputy warden of the Philadelphia County Prison, was convicted of manslaughter in the deaths of convicts punished by confinement in steam-heated quarters during a hot spell in August, 1938, and sentenced to (July 7) prison for from one to three years. Through most of 1939 were held the trials of members of a group of assassins to whom the murders, for payment from ill-wishers (fre-

quently spouses), of about 70 persons of Italian extraction were said to have been imputed. The supposed chief of the assassins, Herman Petrillo was sentenced to death, and a number of other defendants were convicted or pleaded guilty.

Officers. Pennsylvania's chief officers, serving in 1939, were: Governor, Arthur H. James (Rep.); Lieutenant-Governor, Samuel S. Lewis; Secretary of Internal Affairs, William S. Livengood, Jr.; Secretary of the Commonwealth, Sophia M. R. O'Hara; Auditor-General, Warren R. Roberts; Treasurer, F. Clair Ross; Attorney-General, Claude T. Reno; Superintendent of Public Instruction, Francis B. Haas.

PENNSYLVANIA, UNIVERSITY OF. A nonsectarian institution of higher education in Philadelphia, founded in 1740. It is composed of the college of arts and sciences, the college of liberal arts for women, the Towne Scientific School (engineering and chemistry), the Moore School of Electrical Engineering, the Wharton School of Finance and Commerce, the school of fine arts (architecture, fine arts, music), the school of education, the graduate school, and the professional schools of medicine, graduate medicine, law, dentistry, veterinary medicine. An affiliation exists with the Pennsylvania School of Social Work under which students in that School may, under certain conditions, receive University certificates and degrees. The 1938 autumn enrollment was 17,161, including all schools and departments. Of those enrolled 7059 were registered in the undergraduate schools, 3229 were registered in the graduate and professional schools, 6873 were registered in the evening, extension, and summer schools. The enrollment of the 1939 summer school was 1882. The faculty numbered 1565. The productive funds amounted to \$22,323,236. The income for the year from all sources, was \$7,031,658. The library contained 901,164 bound volumes and 219,000 pamphlets. President, Thomas S. Gates, Ph.B., LL.B., LL.D.

PENNSYLVANIA STATE COLLEGE, THE. A State-supported nonsectarian institution for the higher education of men and women at State College, Pa., founded in 1855. On Nov. 1, 1939, the undergraduate enrollment totaled 6422 and the graduate and special enrollments, 778. The 1939 summer-session enrollment was 3482 (net). The resident faculty numbered 593 with the rank of instructor or above; the extension faculty numbered 646, of whom 362 were on a full-time basis. The productive funds amounted to approximately \$517,000, and the income for operation for the previous fiscal year was \$5,892,525. The library contained 200,000 volumes. Resident instruction is supervised by the following seven undergraduate schools and the Graduate School. The undergraduate schools are: Agriculture, Chemistry and Physics, Education, Engineering, Liberal Arts, Mineral Industries, and Physical Education and Athletics. During the fall of 1939, nine major buildings included in the General State Authority-Public Works Administration construction programme, started in the spring of 1938, were completed. They were awaiting the installation of equipment and were expected to be pressed into service in 1940. The total investment in this project is expected to reach \$5,000,000 and will increase the total value of grounds and buildings to \$16,500,000. President, Ralph D. Hetzel, LL.D.

PENROSE MEDAL. See the section *Penrose Medal* (page 306) under GEOLOGY.

PENSIONS. See OLD-AGE PENSIONS; LABOR LEGISLATION; SOCIAL SECURITY BOARD; UNITED STATES under Legislation; VETERANS ADMINISTRATION.

PERAK. See FEDERATED MALAY STATES.

PERFORMING RIGHT SOCIETIES. Co-operative associations of composers, authors, and publishers of music which function as clearing houses for the licensing of public performance of members' copyright music. These societies exist throughout the world, with an international affiliation comprising some 45,000 members. Such societies are founded upon the principle in copyright law that the right to control public performance for profit is vested in the copyright owner.

The American Society of Composers, Authors and Publishers (ASCAP) is chief performing right society in the United States and sole affiliate in this country of the principal foreign societies. Organized Feb. 13, 1914, by Victor Herbert, it is a voluntary non-profit association, now numbering (1939), 1200 members, all of whom assign to the Society their performing rights under the copyright law. ASCAP issues 30,000 licenses annually in the United States to users of music in public performances for profit. Fees vary in proportion to the use of music. Revenue is distributed quarterly among members of ASCAP and foreign affiliates. Foreign societies similarly represent the interests of ASCAP.

ASCAP from its beginning has encountered hostility from organized users of music. With the decimation of sheet music sales in the radio age, composers have come to depend more upon income from exercise of performing rights than from sales royalties. Currently ASCAP's chief opponent is the National Association of Broadcasters, which in August, 1939, launched plans to replace ASCAP's musical reservoir with an independent catalogue to be available with the expiration of ASCAP-radio contracts Dec. 31, 1940. During 1939 ASCAP conducted a vigorous campaign to nullify hostile laws enacted in several states. These laws would outlaw ASCAP's licensing methods. ASCAP challenged the validity of such laws (Washington, Montana, Nebraska, Tennessee, Florida) asserting that since they bar ASCAP members from copyright protection they are unconstitutional. Decision has not been reached (November, 1939), on these cases.

During 1939, nearly 100 of the leading law schools participated in the annual Nathan Burkan Memorial Competition, a copyright law essay contest sponsored by ASCAP which gives a \$100 prize for the best essay from each of the schools. ASCAP's Festival of American Music, a week of free concerts of exclusively American music, at Carnegie Hall, October 1-7, was generally appraised as the most ambitious undertaking of its kind in American musical history.

Officers of ASCAP (1939) are: Gene Buck, President; Louis Bernstein, Vice-President; Otto A. Harbach, Vice-President; George W. Meyer, Secretary; Gustave Schirmer, Treasurer. Headquarters are at 30 Rockefeller Plaza, New York City.

PERIM. See *Aden* under ARABIA.

PERLIS. See UNFEDERATED MALAY STATES.

PERMANENT COURT OF INTERNATIONAL JUSTICE. See WORLD COURT.

PERSIA. See IRAN.

PERU. A republic on the west central coast of South America. Capital, Lima.

Area and Population. Area, about 430,000 square miles, exclusive of approximately 120,000 square miles between the Marañón and Ambiyacu rivers on the eastern slope of the Andes claimed by both Peru and Ecuador. Estimated population on Dec. 31, 1937, 7,100,000. With the exception of about 600,000 whites and a few Asiatics, the inhabitants are of Indian and mixed Indian and white blood. Registered living births in 1937 numbered 170,229; deaths, 86,949; marriages, 21,424. In August, 1936, there were 48,317 foreigners in Peru (22,560 Japanese). Estimated populations of the chief cities (1936) were: Lima, 370,000; Callao, 75,000; Arequipa, 46,000; Cusco, 40,000; Iquitos, 40,000; Chiclayo, 35,000.

Defense. Military service is compulsory, but not all eligible youths are conscripted. The French-trained army in 1938 had 1343 officers and 10,860 in other ranks; Italian-trained police and gendarmerie, about 8000; navy, 2 obsolete cruisers, 2 destroyers, 1 torpedo boat, 4 submarines, 7 river gunboats. A United States naval mission was engaged in 1938. There is a relatively strong air force, trained by Italian officers. Of the total 1939 budget appropriations, 14 per cent went to the army and 8 per cent to the navy and air force.

Education and Religion. About half the population is illiterate. Eleven per cent of the 1939 budget went to education. In 1937 there were 4697 primary schools, with 471,304 pupils; 147 secondary schools, with about 22,474 students; 7 normal schools, with 649 students; 26 vocational schools; and 5 universities, with about 4500 students. See *History*.

Roman Catholicism, the predominant religion, is protected by the state. Only Roman Catholic religious instruction is permitted in state and private schools.

Production. Agriculture, stock raising and mining are the principal occupations. Mineral products comprised 65.1 per cent of all 1938 exports; agricultural, 27.4 per cent; animal, 5.1 per cent. Yields of the chief crops were (in metric tons): Wheat, 90,300 in 1937-38; coffee (exports), 3000 in 1938-39; cane sugar, 397,000 in 1938-39; cotton, 81,500 in 1937-38. Wool production in 1937 was about 9400 metric tons.

Output of the chief minerals in 1938 was (in metric tons): Crude petroleum, 2,100,000; coal, 115,000; salt, 42,000; copper (smelter), 36,000; lead (smelter), 28,500; tungsten ore, 102; antimony ore (metal content), 673; molybdenum ore (metal content), 92; silver, 635.3; gold, 7915 kilograms. Industrial establishments include petroleum and ore refining plants, and factories for cotton textiles, knit goods, hats, food products, beverages, furniture, leather, shoes, glass, soap, and cement.

Foreign Trade. Including specie, imports in 1938 totaled 260,158,735 soles (255,787,000 in 1939); exports, 342,128,640 soles (381,421,000). Values of the chief 1938 exports were (in 1000 soles): Crude petroleum, 73,499; cotton, 60,567; copper bars, 57,890; petroleum derivatives, 42,438; sugar, 24,948; mineral concentrates, 14,516; wool, 11,071; mineral ores, 10,172. The United States supplied 34.3 per cent of the 1938 imports (35.5 in 1937); Germany, 20.3 (19.7); Great Britain, 10.1 (10.3). Of the exports, the United States took 26.8 per cent (22.2 in 1937); Great Britain, 20 (22.8); Germany, 10.6 (13.7). See **IMPORTS AND EXPORTS**.

Finance. Final budget returns for 1938 showed receipts of 184,546,000 soles and expenditures of

183,531,000 soles. The 1939 budget estimates balanced at 174,700,000 soles. The public debt on Dec. 31, 1938, totaled 778,300,000 soles (external, 497,992,000; internal, 73,985,000; floating and short-term, 206,323,000). The sol exchanged at 4.46 to the U.S. dollar in 1938 and at 5.33 in 1939 (free bank rate).

Transportation. Peru has about 2624 miles of railway lines (579 miles state owned). In October, 1938, there were 14,074 miles of roads open to traffic, an increase of 501 miles over October, 1937. The Central Highway from Lima across the Andes was extended to Pucallpa on the Lower Ucayali River during 1939. From this point the Ucayali and Marañón rivers were navigable to Iquitos, port for ocean-going vessels 2300 miles from the mouth of the Amazon. On July 25 the 704-mile stretch of the Pan American Highway between Lima and Arequipa was officially opened. There were 6018 miles of air lines in 1939. In 1938 planes of the five Peruvian air companies flew 1,668,612 miles, carrying 26,453 passengers, 107,795 lb. of mail, 20,452 lb. of parcels, and 584 tons of express. New air lines were opened in 1939 between Lima and Iquitos, Lima and Cusco, and between Lima and Tarapoto. During 1939 work proceeded on the new port of Matarani in southern Peru and on additional harbor works at Callao. The tonnage of vessels entering all ports with cargo and in ballast in 1938 was 16,464,000.

Government. The Constitution of Apr. 9, 1933, vested executive power in a President elected for five years and ineligible for re-election. Legislative power was vested in a bicameral Congress. Suffrage was restricted to literate males of 21 years or older. The government-controlled Constituent Assembly, functioning as Congress, annulled the Presidential and Congressional elections of Oct. 11, 1936, when the electoral count showed an anti-government trend. On Nov. 14, 1936, it extended President Oscar R. Benavides' term of office for three years to Dec. 8, 1939, and then was permanently dissolved, leaving President Benavides with dictatorial powers. See *History* for 1939 developments.

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Revolt Fails. On Feb. 19, 1939, Gen. Antonio Rodríguez, Minister of Government and Interior and a trusted associate of President Benavides, attempted to seize control of the government while the President and other leading Cabinet members were absent from the capital on a holiday. The plot was foiled by loyal officers, who shot and killed General Rodríguez. Four other persons were killed and 36 wounded in the accompanying fighting. President Benavides hurried back to Lima and supervised a round-up of 103 persons suspected of complicity in the conspiracy. Forty-three of these were tried by a military tribunal which on March 22 found Gen. Cirilo H. Ortega and 23 others guilty. Those convicted were sentenced to long prison terms or to exile in remote parts of the country.

Constitutionalism Restored. Shortly after liquidation of the revolt, President Benavides announced (March 26) that he would retire from office at the end of his term on December 8 but would first seek revision of the Constitution to strengthen the executive powers. A new cabinet headed by Manuel Ugarteche was installed April 19 for the purpose of supervising a plebiscite on the President's proposed constitutional

amendments and the Presidential and Congressional elections.

The 10 constitutional amendments proposed by President Benavides were approved by a vote of 368,813 to 53,123 on June 18, according to the government. They extended the Presidential and Congressional terms from five to six years; postponed election of a "corporative Senate" until 1945; provided for election of one-third of the Deputies every two years; gave the President exclusive authority to approve or suppress taxes, approve customs and tariffs, and control public employment; restored the President's power to veto legislation; repealed the system giving minority groups proportional representation in Congress; and enforced the national budget automatically on January 1 of each year, regardless of whether Congress had approved it.

In the elections held October 22, the government's candidate, Dr. Manuel Prado y Ugarteche, supported by 12 conservative parties, defeated José Quesada, candidate of the opposition Patriotic Front, by a vote of 262,971 to 76,142. Prado's running mates, Rafael Larco Herrera and Carlos D. Gibson, were elected first and second Vice Presidents, respectively. Most of the 48 Senators and 140 Deputies elected ran on the same ticket. As in the 1936 election, the government again barred the Aprista party—the most influential opposition group—from presenting candidates or participating in the balloting because of its "international affiliations."

Constitutional government was restored with Dr. Prado's inauguration as President on December 8. He announced that he would "avoid extremes of the Right or the Left," sponsor reforms to raise social, political, and economic standards, and collaborate in restoring world peace and promoting Pan Americanism. His new cabinet, with Alfredo Solís y Muro as President and Foreign Minister, was composed of civilians with the exception of the Ministers of War and Navy.

Other Events. Other developments of the year included Peru's resignation from the League of Nations, announced April 9; additional minor clashes between Peruvian and Ecuadorean troops in the disputed frontier region (see *ECUADOR* under *History*); inauguration of the scheme adopted in 1938 for colonizing the region east of the Andes opened up by the new Central Highway; completion of the great new Palace of Justice in Lima; and the purchase by the government for 2,920,000 soles of the Zorritos oil fields from the Italian owner. To improve cultural and working conditions among the Indians, the government established cultural brigades equipped with trucks, motion picture projectors, radio receiving sets, sanitary units, traveling libraries, etc., to circulate throughout the rural districts.

The outbreak of the European war caused the Peruvian Government on September 3 to assume emergency powers over commerce and trade in order to avert speculation and profiteering. The decree barred price increases in most articles, forbade dismissal of employees or cuts in wages or salaries without government consent, prohibited suspension "without cause" of building operations or other economic activities, established government regulation of exports and imports, and prohibited formation of trusts and monopolies. The war produced no such dislocation of the Peruvian economy as in 1914 but caused an in-

creased shortage of foreign exchange, particularly in dollars, due to the diversion of orders from the European countries to the United States.

See URUGUAY under *History*.

PETROLEUM. Nearly every manufacturing and consumption record of the petroleum industry was broken in 1939, according to the American Petroleum Institute. Nevertheless net earnings were expected to be below even the reduced profits of 1938, due principally to near-record low prices to consumers of petroleum products. The index of wholesale prices for petroleum products for 10 months of 1939 was only 52, compared with the index of 76.7 for all commodities, as compiled by the U.S. Bureau of Labor Statistics. The corresponding indexes for 1938 were 55.9 and 78.6, respectively.

Domestic production of petroleum in 1939 was estimated at 1,260,099,000 bbl. (1 bbl.= 42 U.S. gal.), a rate 3.8 per cent higher than in 1938, but slightly lower than the all-time peak of 1,279,160,000 bbl. in 1937. The European war had little effect on the domestic industry.

Production of other countries in 1939 probably increased 8.5 per cent to 817,532,000 bbl., making estimated world production 2,077,631,000 bbl. compared with 1,967,687,000 bbl. in 1938, and 2,042,038,000 bbl. in 1937, the previous high year. The United States produces fractionally more than 60 per cent of the world production.

Domestic motor-fuel production in 445 refineries, which ran 1,238,959,000 bbl. of crude in 1939, is estimated at 596,111,000 bbl., an increase of 7.2 per cent over 1938. Domestic consumption of motor fuel increased 5.5 per cent, to 552,000,000 bbl., while exports dropped 7.9 per cent to

46,163,000 bbl. Total refinery demand was thus 598,163,000 bbl.

The average motorist in the United States used about 732 gal. of gasoline in 1939, at an average cost of 13.3¢ per gal. Taxes averaged 5.44¢ per gal., making the total cost to the consumer 18.74¢ per gal. Total gasoline taxes levied in 1939 are believed to have reached \$1,029,000,000, passing the billion-dollar mark for the first time. The States collected \$812,000,000, the Federal government \$217,000,000. The average domestic consumption of all petroleum products in 1939 was 1725 gal. per family.

See ALBANIA, ARABIA, BOLIVIA, BRAZIL, COLOMBIA, GERMANY, IRAN, IRAQ, MEXICO, PERU, RUMANIA, and VENEZUELA under *Production or History*; BUSINESS REVIEW; CHEMISTRY, INDUSTRIAL; ELECTRICAL INDUSTRIES; KANSAS; LOUISIANA.

H. C. PARMELEE.

PHILADELPHIA. See PENNSYLVANIA.

PHILANTHROPY. See BENEFACTIONS; ROCKEFELLER FOUNDATION; CARNEGIE CORPORATION.

PHILATELY. See STAMP COLLECTING.

PHILIPPINES. A group of islands in the northern part of the Malay Archipelago; formerly a possession of the United States; transformed (Nov. 15, 1935), into a self-governing commonwealth destined by statute of the United States to become independent in 1946. Capital, Manila.

Area and Population. The Philippine Islands number 7083, including numerous islets; 466 of the group have areas as great as one square mile. The combined area of the islands is 114,800 square miles. Their population by the census taken in 1939 was 16,000,300; according to the census of 1918, it was 10,314,310. The principal islands and their areas in square miles are: Luzon, 40,814; Mindanao, 36,906; Samar, 5124; Negros, 4903; Palawan, 4500; Panay, 4448; Mindoro, 3794; Leyte, 2799; Cebu, 1695; Bohol, 1534; Masbate, 1255. The chief cities and their populations (estimated, 1935) were: Manila, 353,418; Cebu, 82,032; Iloilo, 45,236; Laoag, 42,901; and Legaspi (formerly Albay), 35,694. Tagalog, which was made the "national" language in 1937, is spoken by approximately one-half of the inhabitants. English and Spanish, used for divers official purposes, are each understood by a considerable part of the population; the teaching of English in the public schools is compulsory.

Education. The system of free public schools that had been created in the period of American administration was carried on, somewhat modified, after the Philippine constitutional government came into power. Public schools were reported to number, in 1938, 10,919 (9489 primary, 1316 intermediate, and 114 secondary) as against 7938 in all in 1935. In 1937 all public schools numbered 8913; enrollments of pupils, 1,391,756 in elementary grades and, in all, 1,459,743. Private schools numbered, in 1936, 744 and had 137,187 enrolled pupils. About 67 per cent of children of primary-school age were asserted in 1939 to be enrolled in schools. An Office of Adult Education, created by the Philippine Government in 1936, effected the opening of 2057 schools by the end of 1938, in which 28,940 volunteer teachers instructed an enrolled total of 125,783 adults. Higher education was provided by several technical institutions and two outstanding universities—the State-supported University of the Philippines (458 professors and

U. S. PETROLEUM STATISTICS
(American Petroleum Institute)
Products in thousands of barrels

	1939 *	1938
Production of crude		
United States	1,260,099	1,214,355
Rest of world	817,532	753,332
Total	2,077,631	1,967,687
Foreign Trade—Crude		
Imports	33,735	26,412
Exports	73,594	77,254
Foreign Trade—Refined Products		
Imports	26,014	27,896
Exports	117,336	116,474
Storage, crude, year-end	237,825	274,958
Crude run to stills	1,238,959	1,165,015
Refinery products		
Motor fuel	596,111	556,012
Gas oil and distillate	162,480	151,774
Residual fuel oil	307,564	294,890
Total fuel oil	470,044	446,664
Demand		
Motor fuel		
Domestic	552,000	523,003
Total	598,163	573,112
Gas oil and distillate		
Domestic	133,775	117,449
Total	167,182	147,090
Residual fuel oil		
Domestic	325,384	290,065
Total	343,238	307,985
Miscellaneous		
No. wells completed		
Oil	18,459	19,286
Gas	2,191	2,066
Dry	6,388	6,141
Total	27,038	27,493
Crude oil prices		
High	\$1.02	\$1.22
Low	1.02	1.02
No. Refineries in operation	445	435
No. Oil Burners in operation		
Domestic	1,860,000	1,657,900
Industrial	143,100	128,000
Total	2,003,100	1,785,900

* Estimated.

7665 students in 1937) and Roman Catholic center of learning, the University of Santo Tomas, conducted by the Dominicans.

In religious belief the Roman Catholic faith predominates. An independent Filipino Church has gained a numerous following. Communicants of Protestant denominations are estimated at 250,000. Mohammedans, mainly found in Mindanao and Sulu, were last reported to number 443,037; Buddhists, 24,263.

Production. The harvest of sugar cane, season of 1937-38, treated at some 42 sugar centrals, produced about 1,103,000 short tons of raw sugar, of which nearly nine-tenths was destined for export to the United States. The cultivation of abacá (Manila hemp) produced, in 1937, 200,627 metric tons; the production of rice (1937) attained about 116,184,000 bu.; it formed the chief food of the majority of the population. In some districts, however, Indian corn took the place of rice. The production of corn totaled about 16,320,000 bu. The coconut tree, cultivated on about one-fourth of the agricultural area of the Islands, produced about 577,000 short tons of copra and a variety of other products, all mainly for export. The harvest of tobacco totaled 73,500,000 lb. That of maguay, about 26,000 tons. Cacao and coffee were grown for domestic consumption.

The most striking development of recent years in the Philippines' mineral industry was the rise in the mining of gold. An estimate from the president of the Chamber of Mines, in November, put the expected production of gold, for the year 1939, at \$36,600,000, or 73,200,000 pesos. The rise occurred almost wholly after 1907, for which year the production of gold attained only 187,674 pesos. In 1938 the mining of a number of base metals achieved gains. The exports of iron ore attained about 1,000,000 tons, by value 4,080,645 pesos. Higher export of ore of manganese, in value 999,189 pesos for 1938, indicated increased mining.

Manufactures active in 1938 included about 30 establishments making embroidery and serving the well-developed export market; five makers of cordage out of the native hemp; one cannery, putting up pineapples—a branch of a company in California; and establishments producing, on a limited scale, shoes, matches, oleomargarine, paint, varnish, furniture, and beverages. The National Development Company, a corporate implement of the Government, designed to develop industries, operated a cotton-spinning establishment and a factory producing cement. The National Rice and Corn Corporation, principally a governmental tool for stabilizing the market for rice, worked through subordinate companies to promote the canning of foods; it operated a fish-canning factory in Panganga and a factory for producing cans.

External Trade. The imports of 1938 totaled 265,215,095 pesos, as against 218,051,490 pesos for 1937; the total of exports dropped to 231,590,554 pesos for 1938, from 302,532,500 for 1937. Thus the trade balance for 1938 shifted by about 118,000,000 pesos from the highly favorable level of 1937. Imports from the United States rose to 180,714,457 pesos for 1938, from 126,604,072 for 1937; the exports to the United States fell to 178,889,989 pesos for 1938, from 241,486,043 for 1937. The yearly imports from other countries decreased slightly, to 84,500,638 pesos for 1938, from 91,447,418 for 1937; and the exports to these countries likewise decreased, to 52,700,565 pesos for 1938, from 61,046,457 for 1937. After the United States, the countries doing the greatest commerce with

the Philippines in 1938 were: Japan, from which the Islands imported a total of 25,414,803 pesos and to which they exported 15,026,342 pesos; Great Britain, for which the corresponding totals, in pesos, were 5,432,927 and 6,017,116; Germany, 8,309,238 and 2,988,229; Netherlands, 5,833,732 and 5,082,032; and China, 6,147,691 and 1,904,536. None of the figures above included transfers of gold or silver.

Shipments of gold bullion in 1938 were 60,875,883 pesos. The 10 other chief classes of listed exports (1938), in order of value, were: Sugar (chiefly centrifugal, destined for the United States), 100,044,047 pesos; copra, 24,512,048; coconut oil, 21,532,910; abacá (Manila hemp), 20,318,347; embroideries of cotton and of silk, 10,215,802; products of tobacco, 9,929,979; desiccated coconut, 7,632,715; timber and lumber, 5,650,541; copra meal and cake, 5,495,086; cordage, 2,398,062. See **IMPORTS AND EXPORTS**.

Finance. The Commonwealth issues money, of which the unit is the peso, equal in value, constitutionally and in fact, to 50 cents in U. S. money. The revenue of the Commonwealth's general fund (calendar year 1938) totaled 108,837,563 pesos as against 207,426,346 in 1937, when the total was swelled by the receipt of 111,179,383 pesos from the United States in overdue remittance of several years' collection of a tax on vegetable oils. A special fund received an additional 27,671,422 pesos of revenue (1938), as against 24,581,727 (1937). Yearly expenditures totaled, from the general fund, 129,905,931 (1938), as against 92,552,919 (1937); from the special fund, 14,532,462 (1938), 25,191,484 (1937). The total revenues received yearly by all funds, were 131,414,288 pesos (1938); 228,153,582 (1937). Those of 1938 included 84,134,527 pesos from import duties and internal taxation, 17,688,593 from the remitted tax on oil, and 24,068,861 from earnings and other credits. The total expenditures from all funds (1938) were 139,343,696 pesos: mainly, 55,295,301 for administrative expenses, 27,552,476 for public works, 25,939,487 in contributions to local governments, and 8,196,819 on public debt. The government reported a current surplus of 196,359,909 pesos at the end of 1938. Its excess of yearly expenditure over receipts resulted in great part from a policy of expending out of a surplus equal to some 18 months' income in order to hasten permanent advance in the Islands' economy.

Transportation. The greater part of the mileage of railroads is on the island of Luzon; the Manila Railroad Company, of which the government owns the common stock, operates the Luzon lines, totaling about 700 miles. The Philippine Railway Company operates lines aggregating 133 miles, on the islands of Panay and Cebu. The "clipper" airplanes of the Pan-American Airways normally make weekly trips between the United States and Manila and fly between Manila and Hong Kong. Two companies run lines of airplanes among the islands. Highways in the Islands aggregated 11,888 miles (2916 hard-surfaced) at the beginning of 1939. The Bureau of Public Works expended on the highways, for construction and maintenance in 1938, the equivalent of \$25,520,500; in that year it added 963 miles to the total of highways. See **ROADS AND STREETS**.

Government. An act of the U. S. Congress of Mar. 24, 1934, the Philippine Independence Act, provided a course by which the people of the Islands might gain independence in 1946 and in the meanwhile be governed in greater degree by their

own authorities than before. The citizens of the Philippines as before, owed allegiance to the United States during the years of transition, and had claim to its protection, but were not U. S. citizens. A constitution framed by a Filipino-elected convention and approved by popular vote went into effect Nov. 15, 1935. It established a largely autonomous government on the republican pattern; by name, the Commonwealth of the Philippines. The chief authority in this government rested in a President, elected by popular vote for a term of six years, and a National Assembly of a single chamber of 96 members elected for three years; a Vice-President was elected for six years. President, Manuel L. Quezon (entered office Nov. 15, 1935); Vice-President, Sergio Osmeña.

Particular powers retained by the United States in the Philippines for the period prior to their independence included: Limitation of the Philippine public debt and some features of taxation; entire control of foreign relations; a veto over acts affecting currency, coinage, imports, exports, and immigration, these not becoming valid until approved by the President of the United States; judicial review, by the U.S. Supreme Court, of decisions of the Philippine courts; the requirement that the President of the Commonwealth make reports periodically to the U.S. President and Congress and that all acts of the Philippine legislature be reported to the U.S. Congress. The U.S. Government had as its representative in the Philippines a High Commissioner; his office differed from the predecessor office of the Governor-General, who had been the Islands' chief executive. High Commissioner, 1939, Paul V. McNutt and (successor) Francis B. Sayre.

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Relations with the United States. In Manila President Manuel Quezon held to his advocacy of independence throughout the year, as far as formal declarations went. Yet he found means to put before the public his view that an independent Commonwealth would lack the strength to defend itself. He made this particularly plain in public proposals, during the latter part of 1939, in favor of seeking an international agreement to preserve the Philippines' neutral status. Such a proposal led naturally to explanation of the reason why the Philippines must be neutralized, and allowed Quezon to assert that the Islands could not defend themselves against strong attack, "even though we should arm every male citizen" (speech of November 1). It was reported that Quezon received, at the end of August, a delegation of Filipino planters and business men, heard from them a proposal to initiate a continuance of relations with the United States, and told them that it was not only those who talked of independence who were the real patriots.

Tenure of the Presidency. President Quezon had until November, 1941 to serve; no other possible successor of his influence and experience was in view; but the constitution of 1935 forbade that a President should serve a second term in immediate succession. In an obvious effort to open the way to Quezon's re-election a bill was introduced (April 30) in the National Assembly, to amend the constitution by reducing the presidential term to four years and allowing one immediate re-election. A fortnight later Quezon was reported as indicating his willingness to accept re-election in the event that the constitution were thus changed, declaring, however that in no event would he

serve more than eight years. He apparently contradicted this and another affirmation on July 24, but was said by his supporters only to have meant, on this occasion, that he would not run again unless the constitutional term were reduced. The adoption of the constitutional amendment as to the Presidency soon thereafter sent the amendment to the popular vote for ratification.

Popular and Laborite Movements. Difficulties between tenant farmers and land-owners were acute early in the year, in some districts. An encounter in the province of Pampanga, March 2, left 20 wounded. The government checked the disorders by posting troops in the affected districts. It also encouraged colonization through a national agency by way of remedy. In June representatives of about 30 factions of the labor-union movement signed an agreement to co-operate with a labor commission formed by the government. A national organization of tenant farmers, the National Commission of Peasants, was created in July; President Quezon addressed a great gathering of its members July 16 at Cabanatuan. The Sakdalist leader Benigno Ramos, believed responsible for the Cabuyao uprising of 1935, was convicted of unlawful association (July 8) and sent to prison for a period from eight months to two years.

Economic Control. The chief action of the government in the direction of economic control was the operation of a device to reduce unemployment by carrying out public works; 96,000,000 pesos from remitted U.S. taxes on coconut oil were assigned to pay for such works. A National Abaca Company was organized to aid the business in abaca; the government subscribed 51 per cent of its capital of 20,000,000 pesos. The National Development Company, an arm of the government, began the sale of cotton goods. An Agricultural and Industrial Bank, also an agency of the government, opened with capital of 25,000,000 pesos from the coconut oil money. In November the government decreed maximum prices for 91 commodities; this reportedly hampered business, as dealers held that they could not sell and then renew their stocks in the higher markets from which they must themselves buy; soon the government exempted importers and dealers in numerous lines of goods. Preparations to start an official trading corporation were under way in December.

Legislation. The National Assembly revised the administrative code as to taxation and amended the parity law and the residents' tax. It authorized greater agricultural loans on the part of the Philippine National Bank and the creation of the Agricultural and Industrial Bank. The lawful working day was made eight hours. The government obtained authority to purchase the Manila Electric Company and other public utilities. A special session submitted to the popular vote constitutional amendments for altering commercial restrictions, in conformity with the relaxation of restrictions provided in the U.S. act of 1939, mentioned earlier in this article; for the addition of a second chamber, the Senate, to the Philippine legislature; and for making the duration of future presidential terms four years, instead of six. Another special session adopted a proposal of the National Economic Committee, for the creation of a governmental manufactory of fertilizers, to cost 8,500,000 pesos and produce 50,000 tons a year.

PHILOLOGY, CLASSICAL. Renewed and increased use of Greek and Latin authors in college and secondary education has grown to proportions which may fairly be characterized as

a renaissance of the humanities. As in earlier renaissances the new growth centers about interests which are different from those that had become traditional, and is outside the sphere, sometimes outside the knowledge and often against the opposition of those who are looked upon as the official keepers of the older tradition. The present renaissance is concerned with the contribution of the ancients to the spiritual history of mankind, and is expressed in a study of their literary forms and their criticisms of life. Such study can be and is carried on largely by the use of translations, and by teachers who are not professional philologists. (See J. S. Kieffer, "The Classical Revival at St. John's," *The Classical Journal* xxxv (1939), 144-153; Gilbert A. Highet, "The Renaissance of the Classics," *Columbia University Quarterly* xxxi (1939), 252-262; and Whitney J. Oates, "The Problem of Examining in Latin," *Classical Weekly* xxxiii (1939), 74-76.)

The kind of subjects currently pursued by classical philologists may be judged from the four principal annual bibliographical summaries. These are (1) *Jahresbericht über die Fortschritte der Klassischen Altertumswissenschaft* together with its supplement, *Bibliotheca Philologica Classica* (Leipzig); (2) J. Marouzeau, *L'Année Philologique* (Paris); (3) *Klassieke Bibliographie* (Utrecht); (4) *The Year's Work in Classical Studies* (Bristol). Descriptions of these publications and the names of other bibliographical periodicals, together with a list of the principal journals dealing with classical philology are given in the 1938 volume of this YEAR BOOK (585 f.). The only change worth mentioning, because it illustrates a characteristic shift in the character of support given to philological journals, is the transfer of the publication of the British *Classical Review* and *Classical Quarterly* to the Oxford University Press.

For the amount, direction, and personnel of American work in classical philology a good guide is provided by the *Transactions and Proceedings of the American Philological Association*. Volume lxxix (for 1938, published 1939) reports the seventieth annual meeting of the Association, held at Providence, December 28-30, 1938. Its 700 pages contain thirty-one complete articles, abstracts of forty others, matter dealing with the organization of the Association and its work, a list of members (over 1000), and their bibliographical record for the preceding year. The 1939 meeting of the Association took place December 27-29 at Ann Arbor. Annual meetings for the reading of papers are also held by the regional associations, viz., The Classical Association of the Middle West and South, The Classical Association of the Atlantic States, The New England Classical Association, The Philological Association of the Pacific Coast (which is a branch of the American Philological Association). Reports of the activities of these organizations, of the various State associations, and of the classical conferences held at certain universities during the summer are to be found in the Current Events columns of *The Classical Journal* (St. Louis). The chief interest of this periodical is pedagogical. The highest reputation for critical scholarship is enjoyed by the two quarterlies, *The American Journal of Philology* (Baltimore) and *Classical Philology* (Chicago). Of the former Professor Harold Cherniss has become Editor, in succession to the late Tenney Frank. The only other Ameri-

can journal dealing exclusively with classical philology is *Classical Weekly* (Pittsburgh), which is valuable for its numerous short reviews and its abstracts from other journals. Of the two annuals devoted to classics exclusively, *Harvard Studies in Classical Philology* published its fiftieth volume in 1939, and *Yale Classical Studies* its sixth.

World conditions have not prevented progress in established lexicographical and other similar enterprises. Two new fascicles have been added to the *Thesaurus Linguae Latinae* and a half-volume (the thirty-fifth of the first series, *Olympia* to *Orpheus*) to Pauly-Wissowa-Kroll's *Realencyclopädie der classischen Altertumswissenschaft*. The *Cambridge Ancient History* has attained completion with Volume xii. Additions to the series which present scholarly recensions of the texts of Greek and Latin authors have been few. The principal series are: *Bibliotheca Scriptorum Graecorum et Latinorum Teubneriana* (Leipzig; various revisions); *Scriptorum Classicorum Bibliotheca Oxoniensis* (Oxford; no additions); *Corpus Scriptorum Romanorum Paravianum* (Turin; Florus and parts of Cicero); *Collection des Universités de France publiée sous le patronage de l'Association Guillaume Budé* (Paris; with parallel French translations; Petronius, parts of Plautus, Aristotle's *Rhetorica*, Xenophon's *Hellenica*, the *Greek Anthology*); *The Loeb Classical Library* (Cambridge, Mass.; with parallel English translations). New Latin volumes in this series are Cicero, *Pro Sestio*, et al., J. H. Freese and R. Gardner; Cicero, *Brutus* and *Orator*, G. L. Hendrickson and H. M. Hubbell; Livy, vol. vi, F. G. Moore; Pliny, *Historia Naturalis*, vol. ii, H. Rackham. New Greek volumes are Athenaeus, vol. vii, C. B. Gulick; Demosthenes, *Private Orations*, vols. ii and iii, A. T. Murray; Dio Chrysostom, vol. ii, J. W. Cohoon; Diodorus Siculus, vol. iii, C. H. Oldfather; Dionysius of Halicarnassus, vol. ii, E. Cary; *Mathematici Graeci*, vol. i, I. Thomas; *Oratores Attici Minores*, vol. i, K. J. Maidment; Philo, vol. viii, F. H. Colson; Plutarch, *Moralia*, vol. vi, W. C. Helmhold; Procopius, vol. vii, H. B. Dewing and G. Downey; Nonnos, vols. i and ii, W. H. D. Rouse.

A half dozen of the important new books must be mentioned: M. Bieber, *History of the Greek and Roman Theatre*; R. Syme, *The Roman Revolution*; F. M. Heichelheim, *Wirtschaftsgeschichte der Altertums*; L. Pearson, *Early Ionian Historians*; B. D. Merritt, H. T. Wade-Gery, and M. F. McGregor, *The Athenian Tribute Lists*; R. J. Deferrari, Sister M. Inviolata Barry, and M. R. P. McGuire, *A Concordance of Ovid*.

MOSES HADAS.

PHILOSOPHY. The conflict between new realism and critical realism, which dominated Anglo-American philosophy during the first 30 years of the century, has been forced into the background in the past few years by new developments. The kind of realism which has emerged from the conflict as currently most interesting and provocative is perspectivism or perspective realism. (C. D. Broad called it the "multiple inherence" view.) Summarily stated, it is simply the view that qualities or events are *relative* to other qualities and events, such as those in the perceiving organism. Thus nothing can be said to be red or cubical or to have a certain acceleration, except from a certain position of space where organisms capable of

certain reactions, or other sets of relevant events, are situated. Assuming varied forms in the hands of different writers, this view is always threatened by a collapse into relativism, subjectivism, or loss of generality. And if these dangers are avoided, perspective realism seems to collapse into a view, which its whole purpose was to overcome, that is critical realism; for either perspective realism makes all qualities respective to others, or only some.

The success of the pragmatic polemic against primary *vs.* secondary qualities, and other dualisms, prepares the ground for perspective realism. The claim that this view fits in, better than its rivals, with the new developments of physics, such as the Relativity Theory, especially when put forward by such an authority as A. N. Whitehead, gives it strong support. It is significant that Evander Bradley McGilvary who delivered the Paul Carus lectures at Columbia University in December, chose as his topic, "Toward a Perspective Realism." Another paper read at the American Philosophical Association meeting at Columbia, "Objects Perceived and Objects Known" by A. G. Rampersger, was also devoted to a defense of a perspective view. Perspectivism, which is often advocated under the name of empiricism, operationalism or pragmatism, was emphasized this year more than ever due to the celebrations of the 80th birthday of John Dewey.

A number of meetings were held, papers read and books written exploring every phase of Dewey's philosophy. The program of the American Philosophical Association at Columbia included a symposium, "Dewey's Concepts of Experience and of Nature," in which Dewey defended his views against the criticism of W. E. Hocking and Morris Cohen. Following his usual line of attack, Cohen complained of what he called Dewey's "anthropocentric naturalism." Dewey's perpetual emphasis on human values and social instrumentality, he argued, prevented him from forming any just idea either of nature or of pure disinterested science. Hocking, on the other hand, accepted the validity of the human reference in Dewey's philosophy, and only regretted that Dewey had not followed up this line of thought more consistently to become an objective idealist. In answer Dewey was therefore able to say that each of his critics had made a more successful attack on the other, than on him. He concluded in typical fashion, without sharp disagreement, that neither philosopher had quite understood his position.

A further opportunity for the public to hear Dewey's replies to his critics was offered this year by a new, rather unique, publishing venture: *The Library of Living Philosophers*. The leading idea of this series (edited by Paul A. Schilpp), is to enable an already famous philosopher to reply to criticism while there is still time, and to include the whole discussion in one volume. The first volume entitled *The Philosophy of John Dewey* is of unusual interest. It contains articles so faithful to Dewey's thought, and so purely expository, that Dewey can make no reply, and essays so drastically critical that he can only charge a complete misunderstanding and restate his position, and it includes also, of course, articles of an intermediate nature.

A number of other books and articles were devoted to Dewey. *Intelligence in the Modern World* is a huge compilation of Dewey's writings, selections being made to demonstrate the scope, continuities, and developments in his thought. The

editor, Joseph Ratner, begins the book with a long introduction, in which he explains the significance of Dewey's philosophy of science in relation to that of Whitehead, Russell, and others, much to the disadvantage of the latter. The Scandinavian philosopher, Folke Leander, also published a book, *The Philosophy of John Dewey*, criticizing the pragmatic philosophy on a Continental, Neo-Kantian basis.

Of all the articles published, one by C. I. Lewis, "Meaning and Action" (*Journal of Philosophy*, October 12) deserves special mention. On behalf of Dewey's linkage of meaning and action, Lewis argues that the meaning of a prediction (or cognition) must be found in a possible future experience confirming its truth. "But there are no such . . . confirming experiences which can be predicted without reference to the activity of the subject." Dewey's latest book, *Freedom and Culture*, also appeared this year. Retracing familiar ground which he has often covered before, the veteran philosopher stresses the need of faith in the operation of the scientific method but seems less confident than ever of any real solution of our social ills. "We must know," he concludes, "that the dependence of ends upon means is such that the only *ultimate* result is the result that is attained today, tomorrow, next day, and day after day, in the succession of years and generations."

Another American philosopher, Charles Saunders Peirce (1839-1914), was celebrated this year at a session of the A. P. A. meeting at Columbia University. James Fiebleman, in a paper on "The Influence of Peirce on Dewey's Logic," contended that although Dewey professes nominalism, he adopts Peirce's realism in practice, which accounts for many of his insights that are out of line with nominalism as a metaphysical position. Walker H. Hill maintained that Peirce did not accept pragmatism in the sense of James and Dewey, while Paul Weiss spoke of the consistency and systematic character of Peirce's work as a whole. Finally, Charles Hartshorne gave "A Critique of Peirce's idea of God."

The philosophy of Edmund Husserl (who died in 1938) has also had considerable prominence this year. A memorial volume is in the press and the International Phenomenological Society has been founded with provision for a periodical. The most important phenomenological publication was the posthumous volume of Husserl, *Erfahrung und Urteil: Untersuchung zur Genealogie der Logik*. This extensive work carries further the genetic analysis which had already appeared in the *Formale und Transcendentale Logik*. Abstract logic is traced back to, and substantiated in, prelogical stages of plain intuition. Husserl's sketch of a preface to the 1913 edition of the *Logische Untersuchungen*, which was not printed at that time, appeared this year in *Tijdschrift Voor Philosophie* (1, 2. vol. i, Feb.) with editorial notes by Eugen Fink. The essay is of special interest because in it Husserl engages in sharp polemic with early critics, such as Natorp and Wundt, and explains his relation to Lotze, Brentano, and Bolzano. *The Revue Internationale de Philosophie* (vol. 1. no. 2) was also devoted to Husserl's philosophy. It contains a brief unpublished essay by Husserl, *Die Frage nach dem Ursprung der Geometrie*, which argues that geometrical conclusions must be traced back to *Anschauungen* in which they have their origin and final confirmation. Included in the volume are also articles by Fink, Landgrebe, Berger, Hering, and others. One issue of the *Journal of*

Philosophy (April 27) was also devoted to Husserl's contributions. It included an article by Kenneth G. Hamilton and a brief symposium. A popular exposition called *Edmund Husserl's Phenomenology*, by E. Parl Welch, also appeared.

Basically hostile to phenomenology, but sympathetic to Peirce and Dewey's operationalism, logical positivism, or logical empiricism as it is now called, continued to attract much interest. In September, the Fifth International Congress for the Unity of Science at Harvard University was held. Ernest Nagel read a paper claiming Peirce as a spiritual ancestor of the movement of logical empiricism on the basis of, what might be called for short, his tychism, behaviorism, operationalism, etc. In another paper P. W. Bridgman took issue with Dewey and with logical empiricists for attempting to confine their language to what is public and objective, avoiding the word "I." A sharp line between public and private can only be drawn at the cost of great complication and artificiality, whereas the use of "I" makes my exposition more patently a mere set of marks to guide my activity. The symbolic logician, W. V. Quine, formulated the old philosophical distinction between realism and nominalism as follows: "In realistic languages, variables admit abstract entities as values; in nominalistic languages they do not." John Somerville of Hunter College in a paper on "Methodological Factors in the advancement of the Social Sciences," contended that what is imperative in the social sciences at present is a thorough commitment to the criterion of predictability in order to distinguish truths which are socially valuable from truths which are not. This paper did not accept the position of logical empiricism, nor did others, and the Congress seemed to resist any common basis. Several papers read at the A. P. A. meeting a few months later revolted violently against logical empiricist restrictions of philosophy. J. Lowenberg of the University of California, for example, declared that Carnap's "principle of tolerance" required him to talk either a logical empiricist language or nonsense, whereas he was determined to talk neither.

Among the most interesting logical empiricist books to appear was Rudolf Carnap's *Foundations of Logic and Mathematics*. In it he discusses, not the foundations of logic and mathematics as usually understood but, the foundations of language. Much more importance is assigned to semantics, as opposed to syntax, than in his previous writings and the pragmatic trend of his thought is more pronounced. In another monograph of the *International Encyclopedia of Unified Science*, called *Principles of the Theory of Probability*, Ernest Nagel reviews the most important theories of probability up to the present.

In contrast to the trend of logical empiricism, many books devoted to social philosophy and to the relation between science and society appeared this year. Among the best are H. Levy's *Modern Science*, an extensive review of the achievements of physical science against a background of social needs and necessities, and J. D. Bernal's *The Social Function of Science*, which discusses the problem of how to make science work for society. As is often the case with scientists who become actively interested in bringing science to its full social usefulness, both writers are sympathetic to socialism. In sharp contrast to their socialist humanism, is Gaetano Mosca's frankly fascist defense of the élite in *The Ruling Class*.

The need for objective reports in philosophy,

already answered in other departments of knowledge, was supplied this year by the founding of a quarterly, *Philosophical Abstracts*, which provides digests of books and articles on philosophy appearing in all countries. Another quarterly presented to the public this year, *The Journal of the History of Ideas*, under the editorship of Arthur O. Lovejoy, will trace the peregrinations and vicissitudes of leading ideas through the centuries.

Besides those mentioned in the text, the following books were published this year:

Paul Russell Anderson and Max Harold Fisch, *Philosophy in America From the Puritans to James*; Jacques Barzun, *Of Human Freedom*; Albert A. Bennett and Charles A. Baylis, *Formal Logic*; Max Bense, *Geist der Mathematik*; Maurice Blondell, *Lutte pour la civilisation et philosophie de la paix*; Leonard Bloomfield, *Linguistic Aspects of Science*; Archibald Allan Bowman, *A Sacramental Universe*; Ernst Cassirer, *Axel Hagerström. Eine Studie zur Schwedischen Philosophie der Gegenwart*; Emmanuel Chapman, *St. Augustine's Philosophy of Beauty*; R. G. Collingwood, *An Autobiography*; Francis MacDonald Cornford, *Plato and Parmenides*; R. H. S. Crossman, *Plato Today*; A. D'Abro, *The Decline of Mechanism in Modern Physics*; Rapheal Demos, *The Philosophy of Plato*; Walter Ehrlich, *Das Verstehen*; James Feibleman, *In Praise of Comedy*; Carl Theodore Glock, *Wilhelm Diltheys Grundlegung einer wissenschaftlichen Lebensphilosophie*; Sidney Hook, *John Dewey. An Intellectual Portrait*; Anneliese Maier, *Das Problem der intensiven Grösse in der Scholastik*; J. H. Muirhead, *The Man versus the State as a Present Issue*; Charles M. Perry, *Toward a Dimensional Realism*; James Bisset Pratt, *Naturalism*; Proceedings of the Aristotelian Society (1938-39) and supplementary volume, *Hume and Present Day Problems*; Heinrich Rickert, *Unmittelbarkeit und Sinnbedeutung*; Maurice Riveline, *Essai sur le problème le plus général*; W. R. Sorley, *A History of English Philosophy*; Alban Winspear and Tom Silverberg, *Who was Socrates?*; Herman J. de Vleeschauwer, *L'évolution de la pensée kantienne*; J. H. Woodger, *The Technique of Theory Construction*.

V. JERAULD MCGILL.

PHOENIX (fē'nīks) **ISLANDS.** The group of 8 islands or atolls (Birnie, Canton, Enderbury, Gardner, Hull, Phoenix, and Sidney) in the central Pacific (2° 30' to 4° 30' S. and 171° to 174° 30' W.) belonging (except for Canton and Enderbury which are under joint Anglo-U.S.A. administration) to Great Britain and included in the (British) Gilbert and Ellice Islands colony by Order in Council of Mar. 18, 1937. Total area, 16 square miles; population (Jan. 1, 1938), 62. See CANTON ISLAND, ENDERBURY ISLAND.

PHOSPHATES. See FERTILIZERS.

PHOTOGRAPHY. The year 1939 marked the hundredth anniversary of the introduction of the Daguerreotype process, which was announced to the world on Jan. 7, 1839, by Arago at a formal meeting of the French Academy of Sciences, and on Aug. 19, 1839, the method was made public. In the interval between these two dates, the French government passed a law granting a life pension to the inventor. These events were appropriately commemorated during 1939 by photographic organizations throughout the world with the most significant meeting taking place in the large amphitheater in the Sorbonne in Paris where

over 3000 persons including the President of the Republic assembled on January 7 to hear distinguished leaders pay tribute to the life work of Daguerre and his associate, Niepce.

Two other anniversaries deserve mention, the fiftieth anniversary of the introduction of roll film by George Eastman and the fiftieth anniversary of the first showing of motion pictures with the Kinetoscope by Thomas Edison and William Dickson. *The Photographic Times* of June, 1889, carried an advertisement dated June 15, 1889, in which The Eastman Dry Plate and Film Co. stated that they had "perfected a process for making transparent flexible films for use in roll holders and Kodak Cameras." Edison returned from a European trip on Oct. 5, 1889, and the following day the first completed model of the Kinetoscope was demonstrated for him by Dickson.

It is of interest also that the year represented the centenary of the first use of the word "photography." It appeared first in unpublished notes of the English astronomer, Sir. J. F. W. Herschel, on Feb. 17, 1839, and in an article about Talbot's process by the German astronomer, J. H. Maedler, in a daily newspaper, the *Vossische Zeitung*, on Feb. 25, 1839.

Two publications of considerable historical interest appeared during the year, an article by Mees on the "Modern Era in Photography," which dealt with the development of processes and technique since about 1900; and an English translation by E. Epstein of a book by E. Stenger, *The History of Photography*.

Photography in Color. Color photography continued to expand during the year. The amateur was encouraged to use it more in the many small cameras available and the examination of the tiny transparencies was simplified greatly because one manufacturer supplied the developed films ready-mounted for projection. One of the most unique uses made of these color films was the spectacle known as the "Cavalcade of Color" in the Kodak Building at the New York World's Fair. There, on a screen 22 feet high and 187 feet long, color panoramas and stills were projected from eleven specially designed projectors, each of which held 192 color slides. The largest fine-pitch, precision-ring, spur-gears ever machined in the United States, 45-inches in diameter, were built for these projectors. When in operation, the eleven projectors ran without supervision, their synchronism and the spoken and musical accompaniment being provided by a specially matched sound film (*Sci. Amer.* 160: 367, June, 1939).

A more extensive use of sheet Kodachrome color film was noted by professional photographers and duplicates of this film were made available. A fair percentage of such workers still preferred to use the "one-shot" cameras which made sets of monochrome, three-color, separation negatives from which color prints were prepared. Several methods for making three- or two-color prints were described but each was essentially a modification of well-known processes.

The Trichrome Carbro process was simplified by the introduction of an improved non-frilling carbon tissue, a new single-bath sensitizer, and a semiautomatic method of squeezing the bromide and tissue (*Photography* 7: 21, May, 1939). A novel scheme for converting a thin Kodachrome or Dufaycolor transparency into a color print was introduced in England. It consisted in affixing the picture side of the transparency to a paper

surface and then dissolving away the film support (*Miniature Camera Mag.* 3: 969, Sept. 1939).

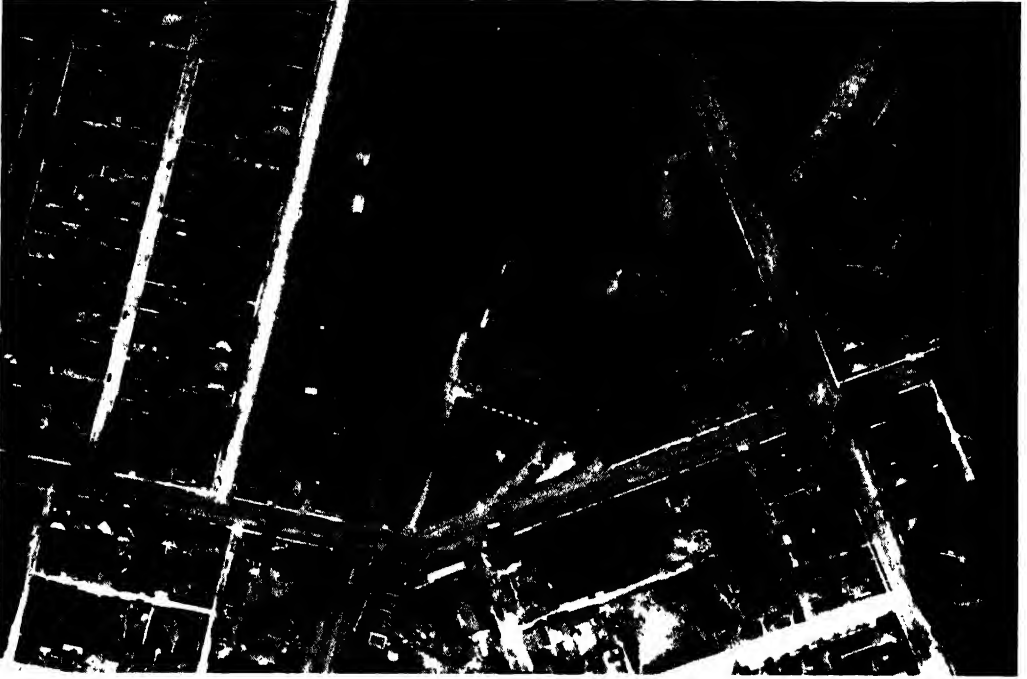
Within the last decade the time required to reproduce a color picture from the stage of making the original exposure to the final printed reproduction had been reduced from a matter of weeks to less than a day. A three-color process reproduction of a news picture was printed in a regular weekday edition of the *Chicago Daily Tribune* within eight hours after the negatives were exposed (*Photo-Engraver's Bull.* 28: 54, Feb. 1939). A set of three-color negatives made of the British King and Queen during their visit to Washington in June were transmitted by Wirephoto to Associated Press papers throughout the United States, marking the first time that "spot" pictures in color had been transmitted within the regular hours of publication.

More motion-pictures in color were produced than in any single year heretofore. Nine Technicolor features were in production during the month of July. One of these, Max Fleischer's *Gulliver's Travels*, represented the second feature-length cartoon ever made, and it was received with acclaim when released in December. Simultaneously it was reported that the Disney production, *Pinocchio* was scheduled for release soon after the close of the year. Impressive evidence of the popularity of the animated cartoon was revealed by the statement that the first feature cartoon, *Snow White*, had made over eight million dollars since its release two years before. In each of these Disney pictures greater realism was achieved by the use of a special multiplane camera and an improved painting technique (*Internat. Phot.* 11: 4, Dec. 1939). The longest color motion-picture ever released, the Selznick-International production *Gone With the Wind*, was widely praised by critics for its artistry and the quality of the color photography.

The Telco color process for 35-mm. motion-picture film utilizes bipack negatives from which black-and-white prints are made on both sides of duplitized positive film. Swelling of the positive silver image is controlled during processing according to the exposure gradation, and for that emulsion printed from the panchromatic negative a red-dyed gelatin filter is introduced into the relief to fill in the unswollen parts. After buffing and reswelling, a yellow gelatin filter is applied. The process is repeated on the opposite side of the positive for the ortho negative except that blue- and green-dyed layers are used (*Kinemat. Weekly* 265: 37, Mar. 30, 1939).

Interest in amateur cinematography in color continued to grow as more cameras and films were made available at a wide range of prices. The initial public showing of a 16-mm sound and color picture was made in the Rockefeller Center Newsreel Theater in New York in May. The picture was projected from the regular booth using an arc for the illuminant, and the lens was chosen so that the image filled the same screen used for 35-mm projection. In September the Cinecolor Co. announced a process for making 16-mm reduction prints in color from 35-mm color negatives (*Mot. Pict. Herald* 136: 36, Sept. 30, 1939).

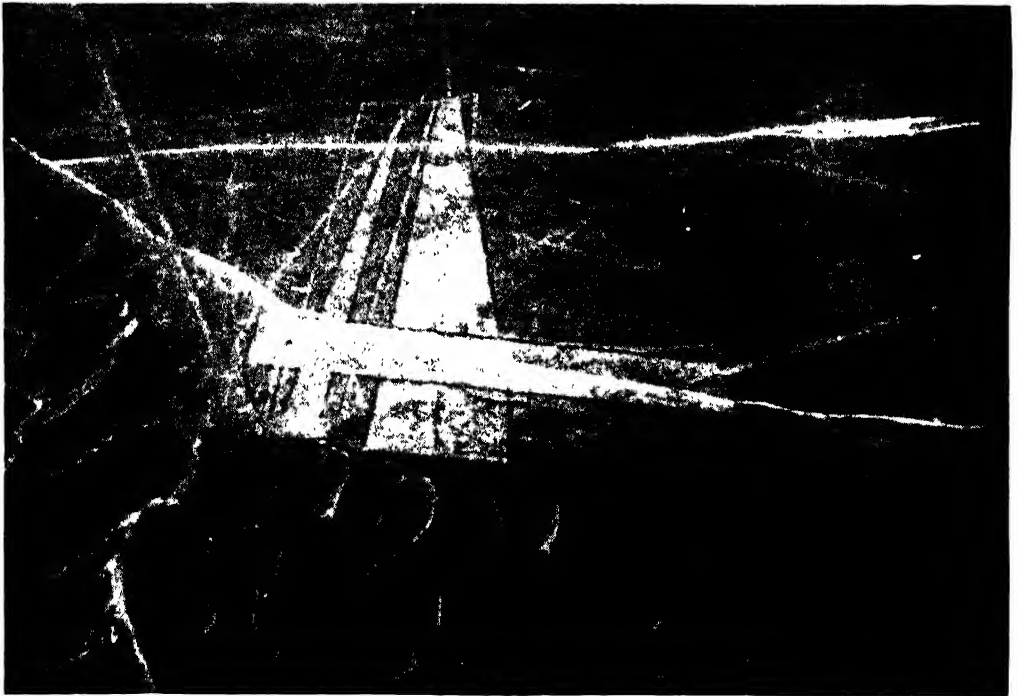
Press Photography. The visit of their Majesties, King George VI and Queen Elizabeth to Canada and the United States in June probably represented the most photographed event of the year. Cameramen from all leading news services in this country and Canada as well as many from



Courtesy U.S. Army Air Corps

AERO PHOTOGRAPH WITH 40-INCH TELEPHOTO LENS FROM ALTITUDE OF 18,000 FEET

Note the great detail, similar to pictures made from altitude of less than 2000 feet

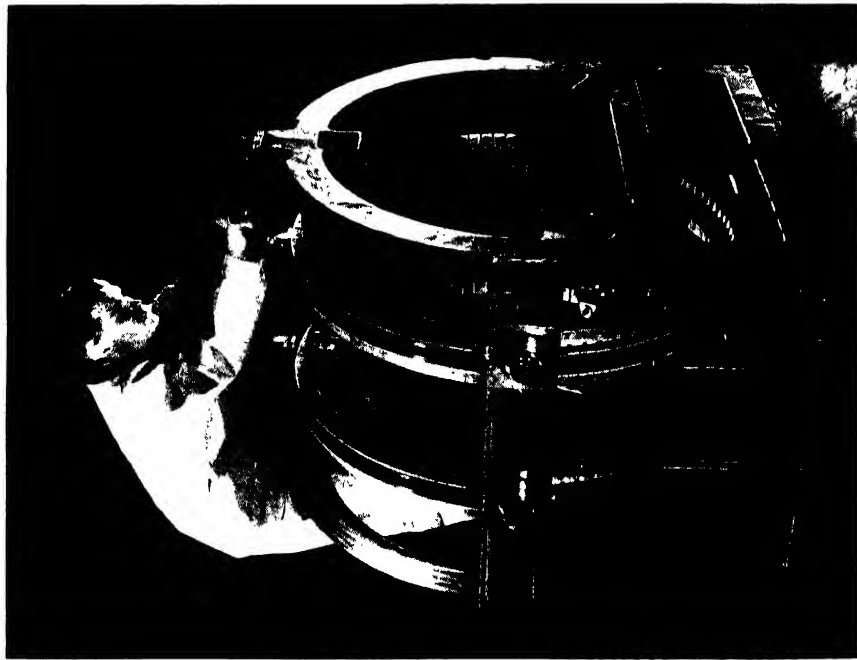


Courtesy Movielone News

MYSTERIOUS PRE-INCA CONES OF THE NASCA VALLEY, PERU

Photographed, from an altitude of approximately 14,000 feet, for the first time by Jack Kuhne while making aerophotographs for the Lowell Thomas Magic Carpet of Movietone picture, *Good Neighbors*. These markings are invisible from the ground and are believed to have been made by an ancient people predating the Incas. Archeologists think they may possibly have been used as a calendar for reckoning time. Some of the markings run straight for a distance of 12 miles.

PHOTOGRAPHY



Courtesy Eastman Kodak Company
AUTOMATIC TWIN PROJECTOR FOR SMALL COLORED SLIDES (1 x 1 1/2- INCHES)

Workman assembling one of eleven special projectors used in Hall of Color at the New York World's Fair. Each precision-ring gear shown behind the two lenses (4 1/2 inch, F/2.0) holds 96 color slides. A 2500-watt lamp was used to project each slide upon a screen, 17 feet wide by 22 feet high. The total size of the semicircular screen for all eleven projectors was 187 by 22 feet. More than 2000 pictures were projected every 12 minutes.



Courtesy The Warner and Swasey Co., Cleveland, Ohio

THE GREAT 82-INCH MIRROR OF THE NEW TELESCOPE AT McDONALD OBSERVATORY

This is the heart of the great telescope. Photograph shows appearance of the mirror after the grinding and polishing had been completed. Afterwards it was installed in the telescope at Mt. Locke, Texas, where it was put into operation in April, 1939.

abroad covered the ceremonies, and every major newsreel company was represented. Pictures were shown in London within 48 hours after their Majesties' visit to Washington. This was made possible by sending the film to Europe on a "clipper" airship.

A strict censorship of news photographs from the belligerent countries was established soon after the conflict in Europe began in September. Nevertheless a fair number of pictures was transmitted by radio and cable to New York. The quality of these pictures was much better than that of photographs transmitted a few years theretofore. A new service for trans-oceanic picture-transmission using cables was announced by the Western Union Telegraph Co. in April (*Photography* 7: 14, July, 1939). See illustrations under GREAT BRITAIN and UNITED STATES.

Motion-Picture Photography. Statistics on the export of motion-picture film released by the Motion Picture Division of the U.S. Department of Commerce indicated an appreciable falling-off in the total footage of positive and negative film. It was pointed out, however, that the decline was not severe because more duplicate negatives were being shipped than theretofore from which positive prints could be made abroad. The annual production cost for the motion-picture industry in the United States was estimated to be \$150,000,000; about 85,000,000 persons attended pictures weekly in the 16,251 theaters in operation; nearly one billion dollars in gross annual admissions was received of which about 10 per cent was paid as taxes to the government (*Mot. Pict. Herald* 136: 23, Aug. 19, 1939).

The introduction of improved film emulsions and the refinement of equipment used in taking and projecting motion pictures resulted in a general advancement of the quality of the motion picture. The use of faster films made possible the use of a smaller camera aperture with improved definition, or if preferred a larger aperture and less light could be used. As much as 30 to 40 per cent reduction in general illumination was reported by several cameramen (*Amer. Cinemat.* 20: 69, February, 1939).

Production requirements for special process projection equipment were summarized in a report of the Research Council of the Academy of Motion Picture Arts and Sciences (Feb. 3, 1939) which also published reports on release print preservative tests (Apr. 14, 1939) and on test reels available for adjusting and maintaining theater sound-reproducing equipment (May 22, 1939). A direct positive system of sound-recording was described by Dimmick and Blaney which permitted the omission of a printing operation and resulted in a reduction of film noise (*J. Soc. Mot. Pict. Eng.* 33: 479, November, 1939). Adoption of a fine grain positive type emulsion for variable density sound-recordings was reported by Hilliard to have given better quality and the possibility was suggested that a film of this type might be used for original picture negatives and release prints (*Amer. Cinemat.* 20: 535, Dec., 1939).

The U.S. Army Signal Corps had prepared about 20 films each year for a number of years as part of a program to be used as a quick-training medium in the event of a national emergency. Other branches of the U.S. Army also had an organized program for the use of motion pictures (*Mot. Pict. Herald*, 134: 29, Feb. 4, 1939). A novel use was made of sound records on motion-picture film by the General Motors

Corporation in their special exhibition known as *Highways and Horizons* at the New York World's Fair. An instrument called a "Poly-rhetor" consisting essentially of a steel drum 8 feet in diameter carried 24 continuous film loops past 168 optical scanners and associated amplifiers. The sound from these films was divided up by this device so that approximately 150 versions of the total talk of 15 minutes duration were distributed to various points along a moving conveyor to explain to four persons seated in each car on the conveyor the portion of a gigantic diorama which was before them. The system was designed to transport about 600 spectators at one time (*J. Soc. Mot. Pict. Eng.* 33: 488, November, 1939). Motion picture films were used daily as part of the television programs broadcast by the Radio Corporation of America at the New York World's Fair.

A definite trend toward a wider adoption of 16-mm film for industrial, educational, and special uses was noted, in part representing a change-over from 35-mm film. One authority claimed that results comparable in quality with the best optical reduction (35-mm to 16-mm) were obtainable directly with 16-mm equipment (*J. Phot. Soc. Amer.* 5: 16, May, 1939).

Aerial Photography. Extensive use of aerial photography for war reconnaissance work was made by the European nations. Several of the pictures made by the Germans over England that were released for publication showed remarkable clarity and it is to be presumed that the English and French had obtained equally as good photographs. Studies were also being made by army cameramen on the use of color films to record more accurately the terrain and camouflaged gun positions.

Further progress on an expanded scale was noted in the U.S. Government's program of crop and erosion survey throughout the country. An exhibition of air photographs in relation to housing surveys was held in London in June. Map revision and road planning and improvement were included. Stereoscopic examination of certain subjects was provided (*Brit. J. Phot.* 86: 376, June 16, 1939). The excellent definition obtainable with modern films and lenses encouraged further studies of vegetation inventories from aerial photographs. Such information is valuable for many purposes, such as forest fire control, erosion and flood control, and land utilization (*Photogram. Eng.* 5: 30, January-March, 1939).

While photographing scenes in the mountains of Argentina, Chile, and Peru, Jack Kuhne, Expeditionary Cameraman for 20th Century-Fox, succeeded in recording the mysterious cones of the Nasca Valley in the Andes. These markings are not visible from the ground and had been observed only once before but never photographed. Of considerable archeological interest, they are believed to pre-date the Inca civilization and possibly may be a calendar for reckoning time (*Amer. Cinemat.* 20: 406, September, 1939).

Visual Education and Microphotography. In the field of education, visual aids were finding greater use although the expansion of a 16-mm film program went ahead rather slowly. Nevertheless some cities, notably the larger ones, had quite extensive programs. One of the largest users of educational films was the city of Chicago where 95 per cent of the elementary schools and every high school were equipped to show motion pictures. Approximately 8000 schools in the

United States were using visual aids. A technique for the use of motion pictures to improve the speed of eye-reading of students was announced by Harvard University (*Science Supp.*, 89: 11, Mar. 17, 1939).

One of the uses of microphotography having possibilities for the future is its use for inter-library loans. Many types of library books cannot be loaned because of their value, fragility, size, or the constancy of their use, but film records of such material could be released (*J. Doc. Reproduction* 2: 3, March, 1939). As a result of a grant from the Rockefeller Foundation, a photoduplication service was set up at the Library of Congress which was said to be large enough to meet all demands for this work (*J. Doc. Reproduction* 2: 176, September, 1939). Considerable interest was being shown in the use of color films for microphotorecords, although the cost and color quality offered certain problems to the user.

Scholastic records of more than 12,000 students at Temple University (Philadelphia) were photographed on motion picture film for more convenient filing and examination (*Mot. Pict. Herald* 137: 15, Nov. 11, 1939). Microfilms of various aspects of 20th Century life were placed in the Westinghouse Time Capsule which was buried in a shaft at the N. Y. World's Fair and in the Crypt of Civilization at Oglethorpe University in Georgia to be examined several thousand years hence.

Photomechanical Processes. According to a survey by *Editor and Publisher*, 441 engraving departments operated by newspaper publishing companies were servicing about 500 newspapers in the United States. Wet plates were gradually being replaced by stripping film for photolithography. Besides cleanliness of operation, the use of film for such work gave better resolving power, improved sensitizing properties, and greater uniformity. Nearly 500 newspapers and commercial plants were reported to be using films exclusively. A number of weekly newspapers were being printed by offset although no large dailies were known to be using this process.

The use of fluorescence photography to exaggerate contrast and to facilitate the formation of highlight screen negatives was noted. The pigment used for the artist's sketches was mixed with fluorescent material; when exposed to ultraviolet radiation, it fluoresces and greater contrast results (*Amer. Photoengraver* 31: 335, April, 1939).

Further refinements were noted in the methods for the reproduction of small color transparencies and the general quality of such printings was improved. Suitable schemes were described for illuminating sheet Kodachrome on the process camera using fluorescent or tungsten lamps (*Photo Technique* 1: 10, August, 1939).

Scientific and Applied Photography. The opening of the new McDonald Observatory at Mt. Locke, Texas, represented one of the noteworthy events of the year. A program of work was started at once and during the first six weeks, 600 spectral photographs were obtained with the great 82-inch reflector, and two new "white dwarfs" or superheavy stars were discovered (*Science-Supp.* 89: 12, May 19, 1939). At Cornell University on August 11 an unusual display of the aurora borealis was photographed extensively in color and in black and white. Encouraging progress was reported on the assembly of the

giant 200-inch telescope on Mt. Palomar in Southern California.

The problem of undersea photography with submersible cameras, lights, etc., was studied by several investigators. Johnson described apparatus, optical properties of water with reference to the selective absorption and scattering of light in water, and the use of filters to overcome these effects (*J. Soc. Mot. Pict. Eng.* 32: 3, January, 1939). A steel tank caisson with a large plate-glass window was used by Bennett for both still and motion picture camera work (*Camera-Phila.* 58: 334, May, 1939). Two automatic cameras with lighting equipment for marine photography about 10,000 feet below the surface were developed and tested independently by Dr. Hofmann, a Munich engineer, and Professor Harvey of Princeton University (*Sci. Amer.* 18: 30, July, 1939 and *Science News Letter* 36: 173, Sept. 9, 1939).

A photographic study of steam-boiler furnaces in operation was made by Markson and Dargan who devised an optical instrument called a pyroscope, which consisted of an air-cooled double telescope. This device permitted single-frame motion pictures to be made of the fuel bed of a stoker-fired furnace over a period of hours without damage to the camera (*Mech. Eng.* 61: 727, October, 1939).

Some difficulties encountered by the Second Byrd Antarctic Expedition in their program of scientific photography were described by Perkins who reported that satisfactory pictures were made at temperatures as low as minus 70° F. (*J. Biol. Phot. Asso.* 7: 49, December, 1938). A very complete photographic laboratory was installed in the great snow cruiser, 'Penguin I., which is to be used by the Third Byrd Expedition.

Physical Measurements. A significant development of the year was the more liberal policy of leading manufacturers in releasing more technical information on the characteristics of their photographic materials. Pamphlets were published containing data on color sensitiveness, resolving power, speed, time *vs.* gamma, etc. A sectional committee of the American Standards Association began active work on standardization of numerous aspects of photography. The standardization of the measurement and specification of the speed of photographic materials was discussed at an international meeting, which was held in Munich in June. Much progress was reported and agreement on this important problem appeared to be in sight.

According to Jones, who had conducted research in sensitometry for 25 years, the negative itself is only a means to an end, which is a *good print*. He concluded that "the most satisfactory evaluation of *effective camera speeds* should be based on the minimum exposure which will yield negatives from which prints of satisfactory quality can be made." A criterion of effective speed based upon gradient considerations rather than upon inertia or density was worked out (*J. Franklin Inst.* 228: 297, February, 1939 et seq.). Methods and instruments for the determination of photographic speeds by measurement of relative characteristic gradients were discussed by Tuttle (*J. Opt. Soc. Amer.* 29: 267, July, 1939). Intensity-scale measurement of sensitometric characteristics of photographic materials appeared to have largely displaced time-scale measurement in many laboratories. A comprehensive report on the sensitometry of photographic papers was published by

Jones and Morrison. A description of and the results with a new instrument for such work were given (*J. Franklin Inst.* 228: 445, October, 1939, et seq.).

The status of lens-making in America was discussed by Rayton, who stated that the American optical industry could now make any practical optical instrument for which qualitative specifications can be written (*J. Soc. Mot. Pict. Eng.* 33: 426, October, 1939). Resolving power and distortion of typical airplane-camera lenses was investigated by Washer (*J. Research Nat. Bur. Standards* 22: 729, June, 1939). Useful data on the relation of camera error to photogrammetric mapping was prepared by Gardner (*J. Research Nat. Bur. Standards* 22: 209, February, 1939).

A method of making screen-brightness measurements in theaters with inexpensive equipment was described by Joachim who cited the need for correction of the variation in brightness which exists in many theaters (*Kinotechnik* 20: 285, November, 1938). Capstaff demonstrated in Hollywood and in New York a method of projecting an illuminated border around a motion picture which was claimed to enhance the quality of the projected picture.

Manufacture and Storage of Sensitized Materials. The amateur, the professional, and the technician were supplied with new films of greater speed in both panchromatic and orthochromatic types. Films of extremely fine grain were also made available. Sheet films and amateur roll films sensitized to infrared were introduced. Several new film emulsions were supplied for motion picture work including background process photography and sound-recording.

Perhaps one of the most significant trends from the standpoint of safety was the elimination of sheet films on nitrate support by one major firm in favor of safety acetate support. Other films on safety support included X-ray, amateur motion picture, aero films, and certain amateur miniature roll films. A gradual change of standard 35-mm. motion-picture film over to safety film was in progress in Germany and France but with the exception of 35-mm. films for non-theatrical use, most of the films made for use in theaters in the United States and in Great Britain was on nitrate stock.

Several interesting articles were published concerning the properties of aero films. Charriou and Valette investigated methods for the hypersensitization of various types of emulsions used for aerial photography and reported in favor of the well-known ammonia treatment (*Publ. Sci. Tech. Ministère de l'Air*, Bull. No. 86, 1939). The properties of safety topographic aero film were discussed by Carver (*Photogrammetric Eng.* 4: 223, October-December, 1938). Reckmeyer reviewed progress made in sensitized materials for aerial photography (*ibid.* 4: 214, October-December, 1938).

Progress was noted in the organization of an international federation of film archives whose purpose would be to effect closer co-operation between the film archives of member countries so that the greatest use could be made of historical and educational films. The National Bureau of Standards in their Miscellaneous Publication M162 published details of their findings on the stability and preservation of records on photographic film. The records to be sealed in the vaults of the Crypt of Civilization at Oglethorpe University, near Atlanta, Ga. were stated to be

of two types, those on safety acetate film and those etched on metal.

New Apparatus. Many new small cameras were introduced during the year, especially sizes which took 35-mm. film for snapshot exposure, as well as cameras taking slightly larger film. Morgan prepared a list of 73 cameras used by the amateur and included constructional details, special features and other pertinent data (*U.S. Camera* 1: 56, June, 1939). The small reflex-type and a miniature model of the "Speed Graphic" were reported to be quite popular. One new camera contained the unique feature of a photo-electric cell for automatic diaphragm control in accordance with subject brightness.

In the 10 years since the photoflash lamp had been introduced, many improvements had been made in its design and the use of such lamps was quite general, especially by the news photographer. Many types of equipment were available for synchronizing photoflash lamps with the camera shutter; even a few box cameras had such attachments. (See the night photograph under AERONAUTICS.) Toward the end of the year the midget photoflash lamp was announced which had a bulb smaller than a golf ball and a light output of 13,000 to 15,000 lumens. Some types of photoflash lamps were manufactured which were specially adapted for use with cameras having focal plane shutters. Fluorescent lamps were recommended for use of the professional photographer.

Recent developments in photographic lenses were discussed by Kingslake who stated that increasing the speed of lenses had resulted in many limitations, which were further complicated by the burst of activity in color photography (*J. Phot. Soc. Amer.* 5: 22, May, 1939). New lenses of extreme focal length, 60-inches, were introduced both in the United States and in England especially for press photography. The use of exposure meters by many branches of the trade appeared to be quite general, although opinion differed greatly on the best method of interpreting the readings of such devices (*J. Phot. Soc. Amer.* 4: 13, Fall-Winter 1938 et seq.; also *Amer. Cinemat.* 20: 200, May, 1939). See GLASS.

Several types of enlargers were announced for the amateur and the professional. One of these was a compact precision instrument which was supplied with interchangeable condensers as well as lenses to accommodate an unusual range of negative sizes. It was adaptable for copying, photomicrography, and special work.

The aroused interest in miniature color slides stimulated the design of several new projectors for such material, some of which were capable of handling up to 50 slides, either semi-automatically or manually. National photographic conventions displayed a limited number of new small cameras for making single exposure sets of three-color separation negatives. A meter for the measurement of the color temperature of photoflood lamps was understood to be finding use by advanced color photographers (*J. Soc. Mot. Pict. Eng.* 32: 298, March, 1939). The color temperature-candlepower characteristic of tungsten lamps was discussed by Weaver and Hussong (*J. Opt. Soc. Amer.* 29: 16, January, 1939).

Several new cameras and projectors were introduced for use with amateur cinematographic films. A limited interest was noted in equipment for sound recording and reproduction on 16-mm film and a few new pieces of equipment for such work were announced. Further refinements in the si-

lencing of cameras for 35-mm sound-motion-picture photography were accomplished. The U.S. Department of Commerce reported that an all-electric slow-motion camera had been demonstrated in Germany in June that was capable of making 80,000 exposures per second. A race-track camera was described by Gantz which could be made to "idle" during the whole race except the finish when it could be brought up to operating speed of 750 pictures per second in $\frac{1}{10}$ second (*Cinema Digest* 5: 6, May, 1939).

A new aero camera which took the largest single negative (18 × 18 inches) ever made was being tested by several organizations. It was equipped with an F:6.8 lens of 12-inch focal length and a 600-exposure magazine (*Popular Phot.* 5: 56, November, 1939). A seven-lens aero camera was developed in England under the supervision of the Air Survey Committee. Machine gun cameras using 16-mm film were used extensively as a highly efficient method of training aerial gunners (*Aero Digest* 34: 110, June, 1939).

Results of preliminary tests with the Brandt Eye-movement camera were described in connection with its use in making lay-out advertising copy. This camera made records of the reflected light from the cornea of each eye of the subject during reading or viewing of pictures or drawings (*Photography* 7: 10, May, 1939).

The Photographic Process. Although numerous proprietary developers continued to be marketed, indications began to appear that a more critical attitude was being taken by amateurs whose patience was being tried by the impossible claims made for some of these products. Fine grain developers still enjoyed a fairly vigorous patronage, but advanced amateurs found the new fine grain films to be very satisfactory unless extreme enlargement was required. A process of development described by Perry for use with underexposures attracted some attention. The film was immersed in a developer just long enough to saturate the emulsion, whereupon it was brought intimately in contact with an inactive smooth surface. Under these conditions no further movement of the developer in the emulsion layer occurred and no swelling was permitted. Highlight density was said to be controlled while shadow densities developed longer than normally (*Photo Art Monthly* 7: 11, January, 1939, et seq.).

Machine processing of film was used in several fields of photographic endeavor. In such work it was common practice to replenish the used developer at intervals, but very little accurate information was known on rapid methods of analysis of used solutions. It is encouraging to note that three papers were published on this subject during the year (Evans and Hanson, Jr., *J. Soc. Mot. Pict. Eng.* 32: 307, March, 1939; Huse and Atkinson, *Mot. Pict. Film Dept. Eastman Kodak Co., Hollywood, Calif.; Baumbach, J. Soc. Mot. Pict. Eng.* 33: 517, November, 1939).

Several papers were published on methods of using color-coupling developers for toning processes (Wilson, *Amer. Phot.* 33: 161, Mar., 1939; Famulener, *J. Soc. Mot. Pict. Eng.* 32: 412, Apr., 1939; Colton, *Photo Technique*, 1: 16, Sept., 1939). Further observations were made by Tull on the mechanism of color development (*Brit. J. Phot.* 86: 115, Feb. 24, 1939).

The evaluation of motion-picture film by semi-micro testing was discussed by Gibson and Weber (*J. Soc. Mot. Pict. Eng.* 32: 105, January, 1939). A very comprehensive treatise on the proposed

residual hypo determinations on film and paper was prepared by Townsend (*J. Documentary Reprod.* 1: 366, Fall, 1938). Useful data on the development of a normal silver halide latent image by electrolysis was given by Morse (*J. Franklin Inst.* 228: 169, August, 1939).

Bibliography. A new monthly publication, *Photo Technique*, issued by the McGraw-Hill Publishing Co., New York made its debut in June. A new German journal, *Zeitschrift für Angewandte Photographie*, was devoted largely to articles of interest to science and industry. It was issued bi-monthly by Hirzel, Leipzig. The *Photo World* published in London by S. Fielder, Ltd., was stated to be an illustrated monthly for the professional and the amateur. A technical publication, called *Photogrammetria*, was started in the fall of 1938 as the official organ of the International Society of Photogrammetry. A number of photographic magazines printed in belligerent countries abroad suspended publication for the duration of the war.

The more notable books of the year were: K. Henney and B. Dudley, *Handbook of Photography* (McGraw-Hill); J. E. Mack and M. J. Martin, *The Photographic Process* (McGraw-Hill); H. D. Murray and D. A. Spencer, *Color in Theory and Practice*, part 1 (Chapman & Hall, Ltd., London); W. G. Briggs, *The Camera in Advertising and Industry* (Pitman & Sons, Ltd., London); E. Stenger, *The History of Photography*, trans. by E. Epstein (Mack Printing Co.); E. Stenger and H. Staude, *Fortschritte der Photographie*, (Akademische Verlags., Leipzig); W. Clark, *Photography by Infrared* (Chapman & Hall, Ltd., London); L. P. Clerc, *Structure et Propriétés des Couches Photographiques* (Revue d'Optique, Paris); G. Stade and H. Staude, *Mikrophotographie* (Akademische Verlags., Leipzig); A. B. Klein, *Color Cinematography*, 2nd edit. (American Photographic Publishing Co.); E. von Angerer, *Wissenschaftliche Photographie*, 2nd edit. (Akademische Verlags., Leipzig); V. Nilsen, *The Cinema as a Graphic Art* (Geo. Newnes, Ltd., London); B. Alfieri, *Free Lance Photography* (Chapman & Hall, Ltd., London); M. Jackson-Wrigley and E. Leyland, *The Cinema* (Grafton & Co., London); R. Taft, *Photography and the American Scene* (Macmillan Co.); H. Windisch, *The New Photo School*, trans. by W. Dreisorner, (Heering, Harzburg); H. Lester, *Photo Lab Index* (Morgan & Lester); W. D. Morgan, *Synchroflash* (Morgan & Lester). H. E. Egerton and J. R. Killian, Jr., *Flash! Seeing the Unseen by Ultra High Speed Photography* (Hale, Cushman & Flint, Boston). An interesting series of 10 handbooks were published by Ziff-Davis Publishing Company, Chicago, under the name, *Little Technical Library*.

GLENN E. MATTHEWS.

PHOTOPERIODISM. See BOTANY.
PHYSICAL MEASUREMENTS. See PHOTOGRAPHY.

PHYSICS. Atomic Energy. Astounding discovery of the year in physics was the splitting of uranium, thorium, and protactinium when bombarded by neutrons. In the process a relatively enormous amount of atomic energy is released which, for the case of uranium, is equal per atom to 175,000,000 electron-volts of energy. While other elements have previously been bombarded with neutrons and other atomic particles and have been made to release atomic energy on a small

scale, the significant point about uranium's fission is that only low amounts of energy are necessary to release the 175,000,000 electron-volts of energy. The action of the neutrons appears to set off some kind of a "trigger" action within the uranium atom which, for a small expenditure of energy, releases large amounts. Hopeful and perhaps too enthusiastic accounts pointed out that here at last was the long-held dream of atomic power.

The original uranium fission experiments were performed in Berlin by Hahn and Strassmann. These scientists did not at first measure the atomic energy liberated but used chemical means to show that uranium, on fission, split approximately in half and gave atoms of barium and other elements of nearby atomic weight; weights roughly half of that of the parent uranium atom. It was the exiled woman German scientist Meitner, long associated with Hahn in his work, who first computed and pointed out that something like 200,000,000 electron-volts of energy should be liberated by this uranium splitting. Quickly known by informal communication in America, the truth of uranium splitting was confirmed in many laboratories by the great energy released in the process.

Key to the dream of atomic power in uranium splitting was that it should be a "chain" reaction and the search for this effect was quickly speeded. Roberts, Wang, Hafsted, and Meyer, at the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, showed that neutrons of a delayed type were given off in the original fission of uranium. It was soon seen that, potentially, these secondary neutrons might serve as the agents for splitting other uranium atoms and continuing the process. It turned out, however, that the yield of neutrons seemed insufficient to set up the chain reaction easily, and at the end of the year one could say only that while the dream of atomic power was brought nearer to realization it was still a long way from reality.

There seemed, from research in many laboratories, to be no definite products of uranium fission other than the rough rule that the masses of the two splitter elements should add up approximately to the atomic mass of the parent uranium atom. Identified during the year as uranium splitter elements were barium, krypton, antimony, tellurium, iodine, strontium, yttrium, lanthanum, xenon, caesium, and rubidium. By Wilson cloud-chamber measurements Mouzon and Park at Duke found partial indication that perhaps three instead of two splitter products were created in uranium fission. Feenberg, at Washington Square College, New York University, used the heat produced in the uranium splitting to set off an explosion of the unstable chemical, nitrogen iodide. Henderson of Princeton, working at California, made direct thermo-couple measurements of the heat liberated by uranium fission and found its energy to be the 175,000,000 electron-volts already cited.

Significant point of uranium's fission was that uranium could be split by both high and low energy neutrons. Thorium appears to undergo fission only with fast (high energy) neutrons and the same was found for protactinium. Bohr of Copenhagen, resident for the year at Princeton, suggested with Wheeler that the low energy neutron splitting of uranium probably would be found to be due to the isotope of uranium having mass 235 instead of 239. The scarcity of the 235 isotope of uranium prevented tests on this point.

The discovery of uranium's fission ended all talk of the super-heavy "trans-uranic" elements

which had been reported in previous years as caused by the bombardment of uranium with neutrons. Many famous and reputable scientists, including Nobel-winner Fermi, had reported such elements and had checked partially back down the table of chemical elements to be sure that the "trans-uranic" elements were not already existing and known elements. The idea that uranium might be split in half by the neutron bombardment was so remote, however, that none of these scientists continued the intricate chemical testing down into the "middle-weight" elements like barium. If this had been done the astounding discovery would have been made several years ago.

The discovery of uranium fission immediately raised the question whether this splitting might be a source of error in the well-known and widely used uranium-lead ratio in the determination of the age of the earth by geologists. Libby, at California, investigated this point, and found that natural fission of uranium—if it occurs at all—is a very long-lived process having a half-life period of disintegration of more than 1×10^{14} years. Since estimates of the age of the earth are approximately 5×10^9 years it is now realized that uranium fission can play no significant role in changing this estimate.

Magnetic moment. Baffling to the layman but highly important to the theoretical nuclear physicist was the measurement of the magnetic moment of the deuteron by the four-man research team of Rabi, Ramsey, and Kellogg, of Columbia University, and Zacharias of Hunter College. The nucleus of the deuterium atom was found to be egg-shaped, or resembling a football spinning around its long axis. Technically the scientists confirmed the "existence of the deuteron quadrupole moment." Previously in nuclear calculations it had been assumed, in the absence of experimental evidence to the contrary, that the nucleus of the deuteron had a spherical shape.

Cyclotron. The great cyclotron at the University of California, whose magnet alone weighs 225 tons, was placed in operation and immediately yielded 16,000,000 electron-volt-energy deuteron particles. By employing alpha particles the energy of this newest and largest of the world's atom smashers can be increased to develop atomic accelerated particles having 32,000,000 electron-volts of energy. This performance excelled even the hopes of Prof. E. O. Lawrence, new 1939 Nobelist in Physics and director of the cyclotron's construction. It is entirely possible that by making minor changes and improvements 50,000,000 electron-volt-energy particles can be secured with this machine. So fruitful has been the operation of this newest cyclotron that Professor Lawrence announced plans for a super-giant cyclotron which would weigh between 2000 and 3000 tons and which could develop atomic particles possessing energies of more than 100,000,000 electron-volts. Plans were under way to secure a minimum of \$750,000 for the construction of such a unit.

Speed of Light. An important experimental method for measuring the speed of light, fundamental physical constant was developed by Anderson of Harvard. Using photoelectric cells the method makes the observations completely automatic and independent of observational errors of the human eye—a long-sought goal of physicists. Work is in progress to arrive at new and, it is hoped, more accurate determinations of the speed of light.

Disintegrations by Electrons. Because of

the low mass of electrons, these atomic particles have never been capable of producing atomic disintegrations. Collins, Waldman, and Polye, of Notre Dame, were able, however, to bring about the first of such disintegrations. They bombarded beryllium with electrons possessing 1,720,000 electron-volts of energy and turned the beryllium, mass nine, into two atoms of helium, each of mass four, and a neutron of unit mass. Mathematical calculations by Guth of Notre Dame predicted the disintegration.

Artificial Radioactivity. The production of artificial radioactivity and transmutation by bombardment with atomic particles has now been completed for virtually every element in the chemical periodic table. So many new disintegrations, with periods differing from those previously known, were reported during the year that a detailed listing is not possible here. One significant discovery, however, that of radioactivity produced in hydrogen of mass three, deserves special mention. Alvarez and Cornag at California produced radioactive mass three hydrogen by bombarding deuterium (mass two) with deuterons (the charged nuclei of deuterium atoms). The disintegration of the hydrogen of mass three takes place slowly and a considerable period must elapse before an estimate of its half life can be given.

Optical Glass. New types of optical glass containing rare chemicals instead of common silica, and possessing, in some cases, the highest index of refraction (light-bending ability) ever reported, were devised by Morey of the Geophysical Laboratory of Carnegie Institution of Washington. Coupled with low dispersion, the new glass will permit better correction for chromatic aberration in lenses. Typical elements used in the new glass are yttrium, barium, columbium, hafnium, tantalum, strontium, zirconium, and boron.

Current Detection. What is claimed to be the most sensitive current-detecting device ever devised was developed by Allen at Minnesota. The new instrument, a vacuum tube, can measure a current equivalent to 0.000,000,000,000,000,001 amperes. This inconceivably small current can be better appreciated when it is realized that the best previous current-detector measured a current equal to 20 electrons passing down a wire a second. The new tube of Allen measures an amount of electricity carried by a single electron passing down a wire every five minutes.

Upper Atmosphere. Preliminary but important discoveries were made in methods for probing the previously barred domain of the upper atmosphere of the earth in the intermediate zone of altitudes above that reached by sounding balloons and below the heights studied by means of radio-reflection measurements in the ionosphere. Johnson, Meyer, Hopkins, and Mock, of the Department of Terrestrial Magnetism of Carnegie Institution of Washington, developed a modulated searchlight technique and photocell detecting mechanism which permits knowledge to be gained of the scattering of light at altitudes of 40 kilometers, or 24.8 miles. With a searchlight mirror of 60-inch diameter it is believed that the method can be applied for studies of water vapor, turbulence, winds, dust, fluorescence, and absorption up to heights of 90 kilometers, or nearly 56 miles.

Magnetism. While Kapitza and others have developed methods for creating intense magnetic fields of 300,000 gauss for brief instants of time, it remained for Harrison and Bitter, of Massachusetts Institute of Technology, to produce the

most powerful, continuous magnetic field, rated at 100,000 gauss. At the peak of its operation the M. I. T. magnet uses 1800 kilowatts of electricity. The 100,000-gauss magnetic field will be used for research on the Zeeman effect, the splitting of spectral lines in a strong magnetic field.

Atomic Particles. No new atomic particles were discovered during the year and this negative result was helpful for the peace of mind of theoretical physicists.

Work continued on the newest of atomic particles, the mesons, (shortened from mesotron discovered in 1937). Many experiments apparently confirmed the fact that the mesons are "born" high in the atmosphere as cosmic rays strike the earth's blanket of air, and then rapidly "die," with an average lifetime of something like 25 ten-millionths of a second, according to Blackett at Manchester.

Cosmic Rays. Balloon flights bearing recording instruments, sent aloft by Millikan and Neher of California Institute of Technology, reached heights so great that only 1 or 2 per cent of the earth's atmosphere was above them. At these altitudes it was found that a definite maximum in cosmic-ray energy occurred, the magnitude of which was about 6,000,000,000 electron-volts of energy. This maximum corresponds closely to the energy to be expected if there is a possibility of transforming into cosmic-ray energy the whole of the rest-mass of the carbon atom.

In Panama, balloon flights under the direction of Johnson of Bartol Research Foundation gave information indicating that the "hard," high-energy component of cosmic rays consists of meson particles. The soft, low-energy component was found to consist of electrons, either positive or negative. Johnson also developed a hypothesis for the creation of mesons at the top of the earth's atmosphere, in which protons strike the blanket of air around the earth and, by their impact, form the mesons.

Other cosmic ray advances included:

The discovery by Jesse of Chicago that cosmic-ray intensity in the winter of 1938-39 was 10 per cent greater than during the spring and summer of the latter year.

The development of a new kind of a meter to measure the presence of neutrons by Danforth and Korff of Bartol, and the use of this meter by Korff on high-altitude balloon flights to prove the existence of neutrons near the top of the atmosphere. The significant point of this research was that neutron intensity increased with altitude ten times as rapidly as did cosmic radiation generally. Korff suggested the splitting of nitrogen atoms by cosmic rays as the cause of this previously unknown phenomenon. He indicated a complete disruption of a nitrogen nucleus would result in seven neutrons being liberated.

Electron Microscope. What is believed to be the most powerful electron microscope in the world was developed at the University of Toronto by Burton, Hillier, and Prebus: it has a limit of resolution of 60 Angstrom units. This corresponds to 0.000006 of a millimeter (six millionths of a millimeter). Magnification produced by the device was 12,700 diameters. Negatives taken with this enlargement were then re-enlarged by microphotography so that pictures of gold colloid films were obtained with a total magnification of 180,000. The new advance excels the previous record, announced in 1938 by German scientists, of an electron microscope capable of resolving objects

100 Angstroms apart, or 0.00001 of a millimeter. Scientists versed in electron research have fixed the limiting resolution of electron microscopes at 0.000001 millimeter from theoretical considerations; a tiny distance which the new Toronto apparatus closely approaches. Best resolving power in an optical type microscope is the Harvard apparatus of Graton and Dane which, while capable of enlargement to 50,000 diameters, has a resolving power magnification of 6,000; less than half as much as the Toronto device.

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WATSON DAVIS (with ROBERT D. POTTER).

PICASSO. See ART EXHIBITIONS.

PITTSBURGH, UNIVERSITY OF. A nonsectarian institution of higher education for men and women in Pittsburgh, Pa., founded in 1787. The total autumn enrollment for 1939 was 10,223, distributed as follows: The College, 2446; engineering, 851; mines, 234; business administration, 1488; education, 839; off-campus centers, 828; graduate school, 2393; medicine, 265; law, 158; pharmacy, 221; dentistry, 228; retail training, 27; school of applied sciences, 226; school of nursing, 19. Students who are taking evening courses are included in the above enrollment. The extension division enrollment was 1098. The 1939 summer session enrollment was 3310. There were 1102 members of the faculty (including fellows of Mellon Institute of Industrial Research) during the year which closed June 30, 1939. The amount of endowment for the year ending June 30, 1939 was \$2,762,918, and the income from endowment was \$85,668. The library contained 350,000 volumes. The School of Nursing was established in September, 1939. Chancellor, John G. Bowman, LL.D.

PIUS XI (ACHILLE AMBROGIO DAMIANO RATTI), 261st Pope, and Bishop of Rome, died in Vatican City, Feb. 10, 1939. He was born in Desio, Italy, May 31, 1857 and was educated at the diocesan seminary at Milan and at the Lombard College and the Gregorian University in Rome. Ordained on Dec. 20, 1879, in 1882 he was assigned to the Seminary of San Carlo at Milan as professor of dogmatic theology. Six years later he was assigned to the Ambrosian Library, Milan, becoming its director in 1907. He immediately began various

needed improvements, cataloguing and arranging the books and manuscripts in an approved modern method. In 1914, Pope Benedict XV appointed him librarian of the Vatican Library, with the title of Monsignor. He alternated between Milan and Rome until 1916 when he devoted all his attention to the Vatican Library.

In 1918, Monsignor Ratti began his diplomatic career. He was sent to Poland as Apostolic Visitor and shortly afterward his scope was extended to include Russia. For his excellent work in establishing a regular ecclesiastical regime, and for his work in the partition of the great estates, many of which belonged to the Church, he was appointed Apostolic Nuncio and consecrated titular Archbishop of Lepanto in Warsaw on Oct. 28, 1919. Until 1921 he worked in Poland, where he was a member of the Interallied Commission which supervised the postwar plebiscites in Silesia; also he was active in working for the release of the Bishop of Minsk from prison in Russia.

On June 13, 1921, Archbishop Ratti was made Archbishop of Milan, and three days later the Red Hat was conferred upon him. His stay at Milan was short, for on Jan. 23, 1922, the death of Benedict XV left the Church without a head. Cardinal Ratti's reputation as a scholar, as an authority on Church law and on history, and the prestige of his diplomatic work, made him an outstanding candidate, and on Feb. 6, 1922 he was elected the 261st Pope. He was crowned Pius XI on February 12.

The theme of the reign of the new Pope was, perhaps, exemplified by his making an unprecedented appearance on the balcony overlooking the Square of St. Peter's and there giving his blessing to the multitude assembled and *Urbi et Orbi*. At his first consistory, Dec. 11, 1922, he declared that the promotion of Christian peace would be the aim of his pontificate and on December 23 he published the encyclical *Ubi Arcano Dei*, which announced as the program of his Pontificate, "The Peace of Christ in the Reign of Christ."

His reign of seventeen years was marked by many problems. Chief among them were the Roman question, the position of the Church in Mexico, Germany, Russia, and Spain, and the separation of Church and State in France. In diplomatic fields, his pontificate had this record: Concordat with Latvia, 1922; Concordat with Bavaria, 1924; Concordat with Poland, 1925; Concordat with Lithuania, 1927; Modus Vivendi with Czechoslovakia, and Conventions with Portugal for the Dioceses of India, 1928; the Lateran Pacts (Treaty, Concordat, and Financial Convention), Concordat with Rumania, Concordat with Prussia, 1929; Concordat with Baden, Concordat with the German Reich, Concordat with Austria, and institution of diplomatic relations between Estonia and the Holy See, 1933; Concordat with Yugoslavia, which was never approved by the Yugoslavian Senate, 1935; and recognition of the Franco Government in Spain, 1937. Possibly the outstanding event of his reign was the settlement of the Roman question and the signing of the Lateran Pacts with Italy on Feb. 11, 1929, which among other things, ended the 59-year imprisonment of the Pope and established Vatican City (q.v.). For a detailed account of the Pact see the NEW INTERNATIONAL YEAR BOOK for 1929.

The Pope created 103 dioceses and archdioceses, elevated 7 sees to archdioceses, established 19 abbeys and prelatures in nullius. Known as the "Pope of the Missions," he created 38 vicariates apostol-

ic; elevated 46 prefectures, 20 of which he created, to vicariates; created 73 other prefectures apostolic, and 24 missions and districts *sui iuris*, and in line with his belief in the necessity of a native clergy, elevated many to the bishopric, including 26 natives of China and Japan. He elaborated the program of Catholic Action, which, modified in every country to meet local conditions, was a policy designed to secure the collaboration of the Catholic laity in the apostolate of the hierarchy. Three times during his reign he announced a Holy Year: The first, to celebrate the 220th Jubilee Year, opened on Dec. 24, 1924 and closed on Dec. 24, 1925; the second, in honor of the Golden Jubilee of his ordination opened in January, 1929 and was extended to July, 1930; the third, which had for its aims the promotion of world peace and the encouragement of a world-wide return to prayer, was opened on Apr. 1, 1933 and closed on Apr. 2, 1934. He canonized, among many, Saints Joan of Arc, Thomas More, John Fisher, Therese of the Child Jesus, John Bosco, and Isaac Jogues; and beatified, among others, Mother Cabrini. He created 76 cardinals.

His many encyclicals were looked for and read with enthusiasm. The most important were *Divinus illius magistri* (Dec. 31, 1929) on the Christian education of children; *Casti connubii* (Dec. 31, 1930) on Christian marriage, which dealt not only with marriage but with current moral trends, companionate and trial unions, sterilization, abortion, contraception, and divorce; *Quadragesimo Anno* (May 15, 1931), which took its name from its first words and was issued on the 40th anniversary of Pope Leo XIII's *Rerum Novarum*, its aim being "to uplift the proletariat"; *Vigilanti cura* (June 29, 1936) on motion pictures; and *Divini Redemptoris* (Mar. 19, 1937), on atheistic communism. The others were: *Rerum Omnium* (Jan. 26, 1923) on the 3d centenary of St. Francis de Sales; *Studiorum Ducem* (June 29, 1923) for the 6th centenary of the canonization of St. Thomas Aquinas; *Ecclesiam Dei* (Nov. 12, 1923) for the 3d centenary of St. Josephat; *Maxima gravissimae* (Jan. 18, 1924) on French diocesan associations; *Quas Primas* (Dec. 11, 1925) in which the Feast of Christ the King was instituted; *Rerum Ecclesiae* (Feb. 28, 1926) on Catholic Missions; *Rite Expiatis* (Apr. 30, 1926) for the 7th centenary of the death of St. Francis of Assisi; *Iniquis afflictisque* (Nov. 18, 1926) dealing with the conditions of the Church in Mexico; *Rerum Omnium* (Jan. 26, 1928) on true religious unity; *Miserentissimus Redemptor* (May 8, 1928) on reparation to the Sacred Heart; *Rerum Orientalium* (Sept. 8, 1928) on the Eastern Churches; *Mens nostra* (Dec. 20, 1929) on spiritual exercises; *Quinquagesimo Anno* (Dec. 23, 1929) marking the 50th anniversary of his ordination; *Ad salutem* (Apr. 20, 1930) for the 1500th anniversary of St. Augustine; *Non abbiamo bisogno* (June 29, 1931) on Catholic Action; *Nova impendet* (Oct. 2, 1931), dealing with the economic crisis, unemployment, and disarmament; *Lux veritatis* (Dec. 25, 1931), commemorating the 15th centenary of the Council of Ephesus; *Caritate Christi compulsi* (May 3, 1932), calling for prayers of expiation to the Sacred Heart; *Acerba animi* (Sept. 30, 1932) dealing with the persecution of the church in Mexico; *Delectissima nobis* (June 3, 1933) on the so-called religious laws of Spain; *Ad Catholicos Sacerdotes* (Dec. 20, 1935) on the Catholic priesthood; *Mit Brennender Sorge* (Mar. 14, 1937) on the Church in Germany; *Firmissimam*

Constantiam (Mar. 28, 1937) on the situation of the Church in Mexico; and *Ingravescentibus malis* (Sept. 29, 1937) on the recitation of the Rosary.

The end of the Pope's reign was marked by his failing health and the difficulties experienced by the Church in Mexico and Spain, but particularly in Germany where frequent violations of the Concordat as well as the Austrian *Anschluss*, which abrogated the Concordat of that country with the Vatican, made for estranged relations. Relations with Italy were also strained at times, particularly in connection with the racial laws promulgated in 1938.

In 1936 the Pope instituted the Pontifical Academy of Sciences. In 1914 he had addressed in Latin the 400th anniversary celebration of the birth of Roger Bacon at Cambridge, England. His publications before he was elevated to the Papacy include *Escursione notturna al Vesuvio* (1899); 42 *Lettere originali di Pio II relative alla guerra per la successione nel reame di Napoli* (1903), *Contribuzione alla storia della arti grafiche milanesi* (1912), and *Scritti alpinistici* (1923), his collected writings on mountain climbing, translated into English as "Climbs on Alpine Peaks."

PIUS XII. See ROMAN CATHOLIC CHURCH.

PLANNING. The National Resources Planning Board (q.v.), as a part of the Executive Office of the President, came into existence July 1 under the President's Reorganization Plan No. 1. It succeeds the National Resources Committee and its predecessors which for several years have conducted planning studies in co-operation with state, regional, county, and city planning agencies. A progress report of the old committee, released in February, stated that at the close of 1938 there were in existence 1200 city and 400 county planning boards, the latter mostly in the Northwest, besides state and regional planning authorities. Yearly revision of the six-year programmes for Federal Public Works construction, provided for by Congress in 1931, was being continued.

The Chicago Plan Commission, a voluntary advisory association of 300 members, was succeeded by an official board consisting of 12 city officials, serving ex-officio, and 10 civilians appointed by the mayor. There will be an advisory board of 200 members. The old commission had functioned for many years. It fathered the Burnham city plan, which was adopted and executed by the city.

"New trends in population growth, advances in zoning technique and recognition of the problems of blighted areas," reported a midwest planning engineer, have led to revision of city plans for Memphis, Tenn., Decatur, Ill., Des Moines, Iowa, and Kansas City, Kan. At Richmond, Va., probabilities of future city growth were analyzed to aid in locating city limits prior to annexation. Street circle intersections at the Federal Capital are being redesigned to remove traffic obstacles. An underpass was under construction at Thomas Circle and plans were being made for changes at Scott and Du Pont Circles. (*Engineering News-Record*, Oct. 26 and Nov. 9, 1939—New York.)

Pomezia, the last of the new towns built on the reclaimed Pontine Marshes, outside Rome, Italy, was dedicated in October. The town is surrounded by 330 farms. Public buildings and farmhouses with plumbing have been provided. See also: Symposium by Sir Raymond Unwin and others, *A Plan for Greater London*, Town and Country Planning, January-March (London).



Wide World

THE PARTITION OF POLAND

Top: The devastation wrought in the modern Praga quarter of Warsaw by German artillery fire and aerial bombardment. *Center:* Polish soldiers, after heroically defending their capital, abandon their positions and surrender. *Bottom:* Chancellor Hitler (front center), with General Keitel (on his left) and other members of his Army Staff, inspect an armored train wrecked by the retreating Poles



Brown Brothers

POLISH TROOPS IN FRANCE

Part of the Polish army organized for service with the Allies on the Western Front after the partition of their homeland



Wide World

THE GOVERNMENT IN EXILE

The first meeting of the new Polish regime in Paris. Seated, left to right: Prof Stanislas Stronski, Vice President of the Council and Minister without Portfolio; Gen Wladislas Sikorski, Premier, Minister of War, Commander of the Polish Armies in France, Gen Josef Haller, Minister of State. Standing, left to right: M. Stanczyk, August Zaleski, Minister of Foreign Affairs; M Ladors, Minister of State; M. Strasburger, Under-Secretary of State

J. E. Acfield, City Engineer, *Planning in Leeds, England*, Journal Town Planning Institute, June, 1939 (London). Planning conventions during 1939 included: American National Planning Conference at Boston, Mass.; Garden Cities and Town Planning Association, Cardiff, Wales; International Federation for Housing and Town Planning, Stockholm, Sweden.

Bibliography. Feder and Rechenberge, *Die Neue Stadt* (Berlin); Lewis, *City Planning: Why and How* (New York); James, editor, *American Planning and Civic Annual* (Washington); *National Conference on City Planning, Proceedings*, 1939 (Chicago).

See NATIONAL RESOURCES PLANNING BOARD; also, BRAZIL, CHILE, MEXICO, and VENEZUELA under *History*.

M. N. BAKER.

PLANTS AND PLANT DISEASES. See BOTANY; ENTOMOLOGY, ECONOMIC.

PLASTICS. See CHEMISTRY, INDUSTRIAL; MACHINE DEVELOPMENT.

PLATINUM. Canada is the world's largest producer of platinum metals, recovery of half the world's supply being made mainly from the copper-nickel ores of the Sudbury (Ontario) district. Production in 1939 is estimated at 292,000 troy oz., substantially the same as in 1938, according to the Dominion Bureau of Statistics. Of this production, approximately 160,000 oz. is platinum and the remainder allied metals: palladium, iridium, osmiridium, and others. The value of the 1939 Canadian production is estimated at \$9,368,000.

Second among world producers of platinum is the U.S.S.R., for many years prior to 1900 the dominant factor, producing 90 per cent of the world's supply. South Africa, United States, and Colombia rank third, fourth, and fifth, respectively. The rise of the United States to fourth position was due mainly to a phenomenal increase in production from the Goodnews Bay district of Alaska.

The price of platinum in the United States fluctuated during 1939 from \$34 per troy oz. in January to \$42 in October, closing the year at \$40.

H. C. PARMELEE.

PNEUMONIA. See BIOLOGICAL CHEMISTRY; MEDICINE AND SURGERY.

POETRY. See LITERATURE, ENGLISH AND AMERICAN; FRENCH, GERMAN, RUSSIAN, SCANDINAVIAN, SPANISH, and SPANISH-AMERICAN LITERATURES.

POLAND. A central European republic, established Nov. 9, 1918, and partitioned between Germany and the Soviet Union in September, 1939. Capital, Warsaw.

Area and Population. On Jan. 1, 1939, Poland had an area of 150,432 square miles and a population estimated at 35,090,000, including 419 square miles with 241,698 inhabitants annexed from Czecho-Slovakia in October, 1938. Living births in 1938 numbered 849,873 (24.4 per 1000); deaths, 479,602 (13.8); marriages, 278,713 (8). Emigrants in 1937 numbered 102,463. The urban population was 27.4 per cent of the total. Estimated populations of the chief cities on Jan. 1, 1939, were: Warsaw, 1,289,500; Łódź, 672,200; Lwów (Lemberg), 318,200; Poznań (Posen), 272,300; Kraków (Cracow), 259,300; Wilno (Vilna), 208,900.

Education and Religion. The 1931 census showed 23 per cent of the population over 10 years of age as illiterate. The school enrollment in 1937-38 was: Primary, 4,851,500; general secondary, 221,200; continuation trades schools, 110,225; universities, 48,018; professional schools, 106,415. At the 1931 census 64.8 per cent of the population were Roman Catholics, 11.8 per cent Orthodox, 10.4 per cent Greek Catholics, 9.8 per cent Jews, and 2.6 per cent Protestants.

Production. About 61 per cent of the working population was engaged in agriculture, forestry and fishing and 19.2 per cent in industry and mining. Production in 1938 was (in metric tons unless otherwise specified): Wheat, 2,171,900; barley, 1,371,300; rye, 7,253,400; oats, 2,656,500; corn, 126,200; potatoes, 34,558,200; beet sugar (1938-39), 491,200; tobacco, 14,600; beer, 1,502,000 hectoliters (hectoliter equals 26.42 U.S. gal.); linseed, 68,400; hempseed, 19,600; rapeseed, 71,700; flax, 39,600; hemp, 12,800; wool and mohair, 5900; rayon, 6204; wood pulp, 187,000; cement, 1,719,000; petroleum, 507,000; coal, 38,104,000; salt, 642,000; iron ore (metal content), 270,000; pig iron and ferro-alloys, 968,000; steel ingots and castings, 1,542,000; zinc ore (1937), 58,000; potash, 108,000. Livestock in 1938 included 3,910,000 horses, 10,539,000 cattle, 7,489,000 swine, and 3,400,000 sheep. Textiles, iron and steel, flour, lumber, petroleum products, and refined sugar were leading manufactures.

Foreign Trade. Imports for consumption in 1938 were 1,299,764,000 zlotys (1,254,298,000 in 1937); exports of Polish products, 1,184,712,000 zlotys (1,195,488,000). The leading imports in 1938 by value were machinery, metals and metal goods, raw cotton and wool; the chief exports, coal and coke, timber, metals and metal goods. The three chief sources of imports in 1938 were: Germany, 299,366,000 zlotys; United States, 158,422,000; United Kingdom, 147,772,000. Of the exports, Germany took 285,812,000 zlotys; United Kingdom, 215,496,000; Sweden, 71,493,000.

Finance. Ordinary budget results for the fiscal year ended Mar. 31, 1939, were: Receipts, 2,531,900,000 zlotys; expenditures, 2,521,300,000. This was the third successive year in which a balanced ordinary budget was achieved after a series of deficits in 1931-36. Extraordinary expenditures totaled 1,063,000,000 zlotys in 1938-39. The national debt was 5,318,500,000 zlotys (internal, 2,829,000,000; external, 2,489,500,000) on Apr. 1, 1939 against 4,974,000,000 zlotys on Oct. 1, 1938. The zloty averaged \$0.1886 (1938), \$0.1884 (1939).

Communications. Poland in 1938 had 12,580 miles of state railway lines, 860 miles of private lines, 209,418 miles of roads (37,771 miles surfaced), and air lines connecting the chief cities with all European air centres. The 1938 traffic statistics of Polish Airlines (L.O.T.) were: Flights, 9980; passengers, 35,800; baggage, 954,140 lb.; freight, 594,748 lb.; mail, 323,532 lb.; newspapers, 363,110 lb.; miles flown, 1,547,286. Poland's overseas trade was carried on chiefly through Gdynia and Danzig. In 1938 Poland imported 1,300,000 metric tons of goods valued at 698,000,000 zlotys through Gdynia and 800,000 tons valued at 98,000,000 zlotys through Danzig; it exported 7,400,000 tons worth 485,000,000 zlotys through Gdynia and 5,200,000 tons worth 278,000,000 zlotys through Danzig. See ROADS AND STREETS.

Government. For the Polish Constitution and government, see 1938 YEAR BOOK, p. 610. Presi-

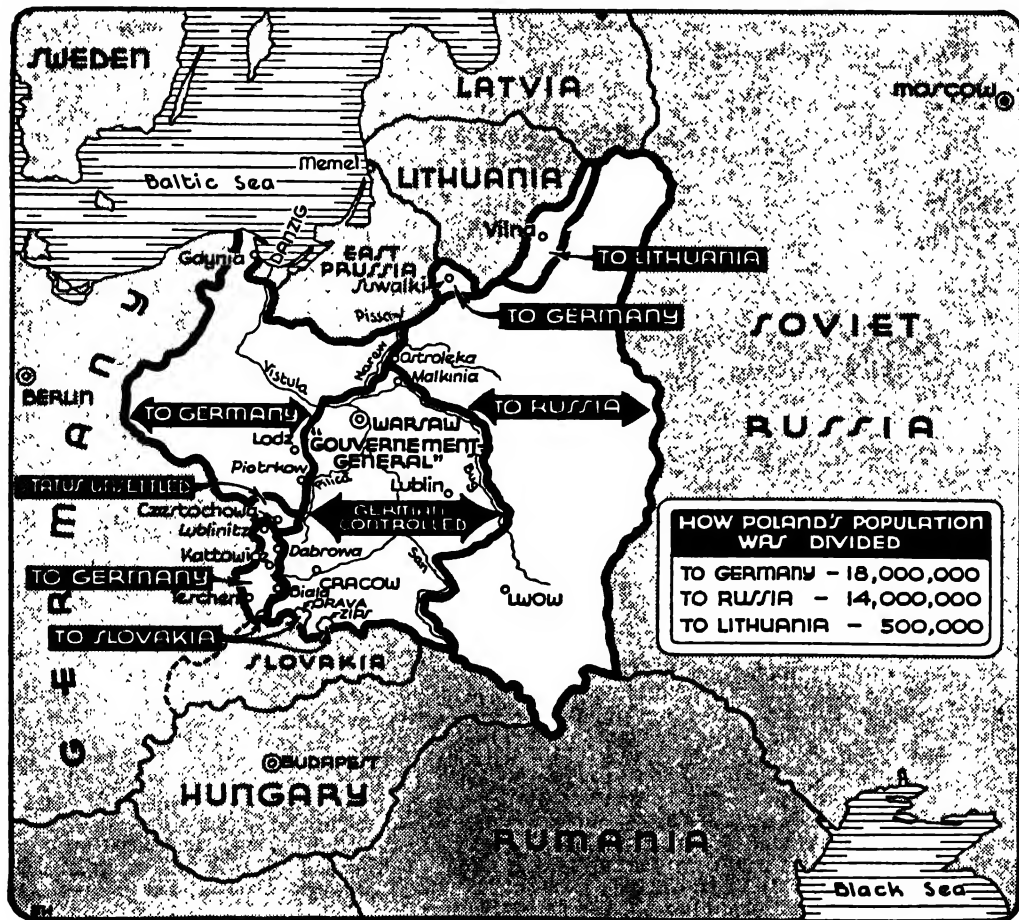
dent at the beginning of 1939, Ignace Moscicki; Premier, and Minister of Interior, Felicjan Slawoj-Skladkowski, heading a non-party cabinet formed May 16, 1936. Many of the dictatorial powers wielded by Marshal Joseph Pilsudski previous to his death were vested in Marshal Edward Smigly-Rydz, inspector-general of the army, in 1936. For developments in 1939, see *History*.

HISTORY

The Partition. The specter of a new Russo-German agreement for the division of Poland, that had haunted the Poles ever since the collapse of the Russian and German empires gave them their independence, became a reality in 1939. On September 1 Adolf Hitler launched the full force of his great war machine against Poland. On September 17, when the Polish armies were being rapidly shattered by the German hammer blows, a great Russian army invaded Poland from the east. In one of the shortest military campaigns in modern history (see *EUROPEAN WAR*), Polish resistance was crushed, Warsaw and other large cities left in ruins, and the government driven headlong across the Rumanian frontier. On September 28 a Russo-German treaty for the division of Polish territory was signed in Moscow. Germany took the western sector, including all of

the purely Polish districts of the country; Russia, the eastern sector, populated mainly by Ukrainians and White Russians. The German sector comprised about 72,000 square miles and a population of some 22,000,000; the Russian sector, about 78,500 square miles and 13,000,000 inhabitants. Germany later gave 225 square miles of Polish territory to Slovakia and on October 10 the U.S.S.R. ceded 2570 square miles to Lithuania.

Polish Provisional Government. The Poles commenced immediately the struggle to regain their independence—a struggle that they had waged without cessation from the partitions of 1772, 1793, and 1795 until 1918. Their British and French allies had proclaimed the restoration of an independent Poland as one of their war aims. To forestall a German-Russian effort to set up a puppet Polish state, President Moscicki before fleeing into Rumania on September 18, signed a proclamation stating that the government was being transferred to foreign soil to "safeguard Polish sovereignty" and the interests of the republic. The cabinet, Marshal Smigly-Rydz, and many Polish officials, army officers, and members of the nobility and other leading families followed the President into Rumania. President Moscicki and others holding official positions were interned by the Rumanian Government at Germany's demand. But many officers, soldiers, and politicians



Courtesy of New York Times

Note: Population given on map is based on 1931 census.

went on to Paris, where headquarters of the Polish independence movement were established. On November 22 the Polish capital was transferred to Angers, France.

On September 30 President Moscicki resigned and transferred his powers to Wladislaw Raczkiewicz, former governor of Pomorze Province, who had gone to Paris. (The Polish Constitution empowered the retiring President to name his successor.) Raczkiewicz immediately appointed a new cabinet to replace that interned in Rumania, as follows: Premier and War Minister, Gen. Wladislaw Sikorski; Foreign Affairs, August Zaleski; Finance, Col. Adam Koc; Vice President of the Council and Minister without Portfolio, Prof. Stanislas Stronski. Later additional members were named representing various Polish parties. Moscicki and the members of the retired Polish Cabinet were permitted to leave Rumania, and most of them joined their compatriots in Paris. The provisional regime in Paris was recognized as the legal government of Poland by France, Great Britain and a number of neutral countries, notably the United States, Turkey and Sweden. The new government had at its disposal a Polish gold reserve of \$75,000,000 that had previously been deposited in Paris as well as substantial gold holdings in the Bank of England.

A moderate Conservative of democratic leanings, General Sikorski asserted that the Polish state when re-established would adopt democracy as its basic principle of government. On December 19 a National Council was created, including representatives of all former Polish opposition parties, to function as a war-time Parliament.

Polish Legion Organized. General Sikorski had previously (September 28) been named by the French Government in collaboration with the Polish Embassy in Paris as commander-in-chief of the Polish armies to be organized in France. Recruiting of men of military age from among the 800,000 Poles residing in France commenced September 29. Subsequently recruiting activities were extended to over 7,000,000 Polish citizens in Great Britain and the other democratic countries. General Sikorski declared his cabinet was one "of war and union. Its first task will be to organize an army and carry on the fight begun with courage and spirit by the soldiers and population of Poland." By the beginning of December two divisions were in training at Angers.

Polish-Czech Collaboration. Repudiating the foreign policy followed by the defeated Polish regime, the Sikorski Government announced that it would work in close collaboration with the Czechs and Slovaks led by ex-President Eduard Beneš who were organizing a provisional government in London dedicated to the restoration of Czecho-Slovak independence. On October 15 Dr. Beneš and Premier Sikorski exchanged formal assurances that they would never recognize the disappearance of Poland and Czecho-Slovakia.

German Policy in Poland. While the Poles were organizing to aid Britain and France in war against the Reich, Germany was carrying forward a thorough reorganization of its Polish conquest with two principal aims in view—economic exploitation and Germanization. Even before the fighting in Poland had ended, the German organization for the economic development of the conquered territory had begun to function. The German Labor Service aided army engineers in making the repairs needed to permit the resumption of economic activity. Deserted farms were

occupied and their crops and cattle cared for to augment the German food supply. Factories, railways, mines, and foundries were repaired and placed under German managers. Leading Polish business enterprises were likewise reorganized under German direction.

Thousands of Polish war prisoners, peasants and laborers were impressed for the heavy work of repairing war damage in Poland and replacing the men called to the colors from factories and farms in Germany proper. According to a Berlin correspondent of the *New York Times*, the destruction of property in those sections of western Poland fought over during the six weeks' war was greater than in the regions devastated during four years of warfare in France in 1914-18. Prisoners and other Poles employed by the Germans were paid 60 per cent of the prevailing wage for their labor.

In contrast with German policy in Czecho-Slovakia, where Czecho-Slovak cultural and political autonomy was recognized, at least in principle, the Nazi policy in Poland called for complete suppression of the Polish language, schools, cultural organizations and all other bulwarks of Polish national consciousness. German names supplanted Polish names for cities, squares, shops, etc. German commissioners operated former Polish-owned shops and hotels in the German language. The swastika banner everywhere replaced the Polish national flag. Polish children were required to go to German-language schools. Nazi youth societies were organized to aid the Germanization of Polish youth. Particularly in the former Polish Corridor, Polish peasants and business men were systematically replaced by Germans. The former German minority in Poland received the pick of the official posts and business positions opened as a result of the Germanization programme. Germans from Danzig and from the Baltic States (see ESTONIA, LATVIA, and LITHUANIA) were settled by the German Government on former Polish lands.

Towards the end of 1939 reports from various sources tended to substantiate the charges of the Polish Government in France that the German conquerors were exacting a terrible vengeance upon the Poles in the form of large-scale executions and imprisonments. The German terror appeared to be directed mainly at educated Poles of the middle and upper classes for the purpose of eliminating the groups mainly responsible for the preservation of Polish national patriotism during the previous partitions. Mass reprisals were inflicted upon cities or villages in which anti-German incidents occurred; the Catholic clergy were harried; and the Poles, like the Jews, were relegated to a helot status. Famine and disease, following in the wake of war and of a winter of unprecedented severity, added to the sufferings of the defeated. The German Foreign Office, justifying the harsh treatment of the Poles, charged on December 30 that Poles had "murdered" 5437 Germans in Poland since the start of the war.

Responsibility for carrying out these measures was placed by Hitler on Col. Gen. Gerd von Rundstedt, who was appointed head of the military regime in the occupied regions of Poland on September 27. Dr. Hans Frank, German Minister of Justice, was appointed head of the civil administration on General Rundstedt's staff. Under a decree signed by Chancellor Hitler and his war cabinet on October 8, some 30,000 square miles of Polish territory with about 8,000,000 inhabitants

were annexed as an integral part of the Reich on November 1. This area included the provinces of Pomorze (West Prussia), Posen and Upper Silesia and its annexation re-established in general Germany's 1914 boundaries. The German-occupied region east of this new frontier was given a separate status. Called the "Gouvernement-General," it was placed under the administration of Hans Frank on October 25. As Governor-General, Frank was assisted by Arthur Seyss-Inquart, former Governor of Austria.

In connection with this political reorganization, the Reich carried out one of the greatest reshufflings of population in modern history. All Poles and Jews living in the sector annexed to Germany were ordered to move east to the Gouvernement-General to make room for Germans from eastern Poland, the Baltic States, and the Italian Tirol. Jews were sent to the Gouvernement-General from all parts of the Reich and its dependencies, and for the most part were forced to settle in a "reservation" between Lublin and the Russian frontier.

Eastern Poland Sovietized. The day after Soviet forces commenced the invasion of eastern Poland, a Russian communiqué declared that they were sent "to bring order and reassurance to Poland and to help the Polish people, confronted with the collapse of their State." As the Russian forces advanced, meeting little resistance from the small Polish reserves left behind during mobilization on the western front, they set in motion a process of wholesale sovietization, carried out by peasant and other lower class groups at the instigation or under the guidance of political commissars accompanying the Red Army. Thousands of landlords, priests, middle class elements, Polish officials, and the more well-to-do peasants fled before the advancing Russians, and many escaped across the frontiers into Hungary, Rumania, Lithuania, and even the German-occupied sections of Poland. Those who remained were deprived of their properties and positions and either exiled, imprisoned, or executed. Churches were closed and converted into barracks, motion picture houses, or to other uses. According to a Moscow anti-religious newspaper, *Bezbozhnik*, many Roman Catholic and Greek Orthodox priests were slain. Local committees of peasants and workers, co-operating with the Red Army political commissars, assumed control of villages, towns and country districts. The land, livestock, equipment, and personal possessions of landlords and other bourgeois or upper-class individuals were distributed among peasants sympathetic to the Russian invaders. In the larger cities the stores, banks, and large business houses were reported to have been confiscated by the Soviet Government.

The Russians also catered to the anti-Polish sentiments of the Ukrainian and White Russian populations, eliminating all traces of Polish rule, and sending into those regions from the Soviet Union Communist-trained teachers, labor leaders and other propagandists of Ukrainian and White Russian nationality. The local labor organizations were replaced by Soviet-controlled trade unions. An extensive propaganda machine, which enlisted the soldiers of the occupying armies, was established to win the peoples of the Russian-occupied districts over to Soviet rule.

On October 23 elections to National Assemblies were held in the Ukrainian and White Russian occupied regions. It was announced that the candidates selected by the Soviet authorities had re-

ceived more than 90 per cent of the votes. The National Assemblies then met in Lwow (Ukraine) and Bielowostok (White Russia), respectively, and petitioned the Supreme Soviet at Moscow for admission into the Soviet Union as part of the Ukrainian and White Russian Soviet Socialist Republics (q.v.). The petition was granted by the Supreme Soviet on November 1-2 and formal annexation of these territories followed November 3. These events were accompanied by numerous arrests of Socialist and labor leaders in the annexed territories by Soviet authorities and by increased efforts to win acceptance of Soviet rule by the newly acquired populations.

Ukrainian Nationalism. This propaganda, however, encountered opposition from the Ukrainian nationalists, whose struggle for autonomy and independence had for years harassed government officials in both the Polish and Soviet Ukraine. Ukrainian nationalist bands, hostile to both Poles and Russians and hoping for independence from the German victory, inaugurated a reign of terror against Poles and Jews in the Polish Ukraine in the period between the collapse of Polish authority and the arrival of Soviet troops. A Ukrainian provisional government was set up in the region for a short time (for background, see 1938 YEAR BOOK, p. 611).

Polish Politics. The violence of the Ukrainian revolt against the Poles was due in no small part to the refusal of the Polish Government, even when facing the virtual certainty of German invasion, to grant the peasant masses and the minority nationalities a share in the administration of the country.

When the Reich first began to press its demands upon the Warsaw Government in March, 1939, the opposition leaders urged President Moscicki and Premier Slawoj-Skladkowski to form a cabinet of national defense that would unite all political elements in Poland against the Nazi threat. It was asserted that the existing government, representing a small minority of the population, did not command full public support. The government leaders turned a deaf ear to these appeals, although they permitted the return of the Polish peasant leader, former Premier Wincenty Witos, who had been in exile since sentenced to an 18-months' prison term for political activity in 1931.

Again elected president of the Peasant party on May 17, 1939, Witos declared that the peasants would defend Polish independence to the last. "The only reward we ask," he said, "is full citizenship rights in a Poland of freedom and equality, prosperity, and justice, loved and defended by all her citizens." The Polish peasant and other democratic opposition groups strongly supported the government's policy of firm resistance to Berlin's demands, as did the more responsible spokesmen for the minority nationalities. Nevertheless government officials made it plain that Poland's return to close collaboration with Britain and France did not mean restoration of democracy in Poland. When Parliament adjourned on June 16 it vested President Moscicki with emergency powers to issue legislative decrees until it reassembled.

Following the annihilation of the republic, Poles of all political opinions were reported to have placed responsibility for the disaster upon the quasi-dictatorship. Its foreign and defense policies had failed, and the flight of the government from Warsaw 24 days before the capital actually sur-

rendered to the Germans was believed by many Poles to have given the Russians a pretext for invasion. These circumstances accounted for the pro-democratic views expressed by the provisional government formed later in Paris.

Foreign Policy. At the beginning of 1939 Foreign Minister Josef Beck's policy of independent action and ruthless realism, calculated to prevent Russo-German collaboration and to maintain the balance of power between these powerful neighbor states, appeared to be paying Poland substantial dividends. Poland in 1934 had virtually nullified her alliance with France and signed a non-aggression pact with Hitler that permitted German expansion into Austria and Czecho-Slovakia. But this understanding with Germany had enabled Poland in 1938, by methods similar to those employed by Hitler against the Austrians and Czechs, to force a favorable settlement of her long dispute with Lithuania and to seize the Teschen district from Czecho-Slovakia (see 1938 YEAR BOOK, p. 612). At the same time it had lessened Soviet influence in Europe.

After the Munich triumph of 1938, Hitler's encouragement of the Ukrainian nationalist movement aroused Polish resentment, but did not move Colonel Beck to change his policy. In January, 1939, Beck had a cordial conference with Hitler in which the *Fuehrer* again proposed a German-Polish alliance for an attack upon the Soviet Union. The offer was declined. Beck felt confident that Russia and Germany would never come together so long as Hitler retained power in the Reich, and he had no intention of voluntarily making Poland a Soviet-Nazi battleground. Nor did he wish to strengthen Germany as against Russia, realizing that if either of these countries established predominance over the other, Poland's existence would be threatened.

Beck's "realism" led him to encourage Italo-German colonial claims upon Britain and France during the visits of the Italian Foreign Minister to Warsaw late in February. German expansive energies would thus be deflected from eastern Europe. At the same time Beck by negotiations with the Rumanian, Hungarian, and Lithuanian governments continued his efforts to build up a bloc of neutral states in Eastern Europe under Polish tutelage that would be strong enough to ward off attack from either Germany or Russia. On March 2 the government party's supreme council at Warsaw also evidenced Poland's growing international ambitions by putting forward a claim for a share in the redistribution of overseas colonies that was expected to follow Italo-German pressure against Great Britain and France.

Nazi Demands on Poland. These Polish ambitions suffered a rude check when Hitler in the middle of March suddenly occupied Bohemia and Moravia and established a military protectorate over Slovakia. German troops in Slovakia were in a position to outflank the Polish defense lines along the German frontier (see CZECHO-SLOVAKIA under History). On March 22 the Reich seized Memel Territory (q.v.) from Lithuania and undercut Polish economic and political influence in the latter republic.

Most ominous of all these adverse developments were the proposals made to the Polish Ambassador in Berlin by Foreign Minister von Ribbentrop on March 21. These called for the return of Danzig to the Reich and the cession by Poland of a strip of territory connecting East Prussia and Germany in which the German Government

would construct a railway line and automobile road and exercise extra-territorial rights. In return, according to German sources, the German Government offered to accept the existing western Polish frontier, conclude a 25-year non-aggression pact, and guarantee Poland's economic interests in Danzig. The Poles denied having received the latter proposals.

The British Alliance. Von Ribbentrop emphasized that if these proposals were not accepted immediately, they would be withdrawn and never repeated. At the same time there were reports of German troop concentrations along the Polish frontier. The anti-Polish agitation in Danzig (q.v.) assumed new violence. These circumstances increased Polish fears that Hitler was planning to repeat the tactics used so successfully against Czecho-Slovakia and that he aimed to destroy or emasculate Polish independence by successive demands backed by the threat of armed invasion.

Accordingly the Poles hurriedly sought to enlist the aid of Britain, France and the Soviet Union, while attempting to reach an amicable settlement with the Reich that would not weaken Poland's military position. At the same time they called up large numbers of reserves and gave notice that they would not capitulate to German threats.

On March 22 Poland offered to join the Anglo-French "peace front" provided Britain would sign a military alliance. While these negotiations were being pressed, the Warsaw Government on March 26 submitted counter-proposals to the German demands of March 21. It suggested a common Polish-German guarantee of the separate entity of the Free City of Danzig on the basis of respect for Polish rights and interests in that territory and complete freedom of the Danzig population. In place of the proposed extraterritorial zone across the Polish Corridor, it offered to grant Germany further facilities for travelers and goods in transit between the Reich and East Prussia. No reply was received from Berlin.

With the German attitude appearing more threatening, the Anglo-Polish discussions were hastened. On March 31 Prime Minister Chamberlain announced in the House of Commons that Britain had agreed to go to Poland's immediate aid "in the event of any action which clearly threatened Polish independence and which the Polish Government accordingly considered it vital to resist with their national forces." Despite German warnings that dire consequences would follow, Foreign Minister Beck went to London early in April and agreed to negotiate a permanent Anglo-Polish alliance insuring mutual aid in case either was attacked by Germany. This treaty was signed on the eve of the war (August 25).

Polish-German Pact Abrogated. When Chancellor Hitler in his Reichstag speech of April 28 announced the abrogation of the Polish-German non-aggression pact of 1934—five years before it was due to expire—the Polish-German crisis began to assume a more and more serious aspect. Attacks upon Poles in Danzig had already inflamed Polish public sentiment to the point of anti-German demonstrations. On May 5 Foreign Minister Beck in a speech to the Sejm firmly rejected the German demands and denied Hitler's assertion that the Anglo-Polish mutual assistance pact was a violation of the German-Polish non-aggression treaty.

Throughout the spring and summer of 1939

Poland was subjected to a "white war" of threats, military preparations, diplomatic maneuvers and agitation among the German minority in Poland, all directed from Berlin with the objective of either forcing Warsaw to capitulate or shattering the understanding between Poland, Britain, and France. Apparently it was expected in Berlin that Chamberlain and Daladier, rather than go to war over Poland, would re-enact their role at the Munich Conference and induce the Poles to give in.

The Poles, however, refused to be intimidated, and Britain and France repeatedly warned Hitler that they would stand by their pledges to aid Poland if it were attacked by the Reich. These warnings were backed by steps to co-ordinate the military efforts of the three powers. In the middle of July Maj. Gen. Sir Edmund Ironside, Inspector General of British Overseas Forces, held official staff talks in Warsaw. Franco-Polish military leaders had previously conferred. On August 2 Britain agreed to advance Poland a credit of £8,163,300 for the purchase of war materials in Great Britain.

Polish-Soviet Relations. Britain and France also sought to implement their guarantee of Polish independence by bringing the Soviet Union into the "peace front" organized after Hitler's annexation of Bohemia and Moravia. The Polish attitude toward collaboration with Moscow was later cited by Soviet commentators as one of the principal reasons for the failure of the Anglo-French-Soviet negotiations.

Immediately after German occupation of Bohemia-Moravia the Poles sought to improve their relations with Moscow, and on May 8 the Soviet Government accredited a new Ambassador to Warsaw, filling a post left vacant for two years. The Poles, however, flatly rejected Russian proposals for the entrance of Soviet troops into Poland to fight against the Germans in case of a Nazi attack. The Poles insisted that Russian help be confined to military supplies, assistance in the air and facilities for the importation of arms and munitions from Britain and France through Soviet Black Sea or White Sea ports. The Polish Government, controlled by army officers who had fought against the Red troops in 1920 and by the landed aristocracy, feared that if the Russians entered Poland as allies they might not leave when war with Germany was over, and that their presence would strengthen the Communist movement among the Polish masses.

Effect of Russo-German Pact. Polish hopes of limited Soviet collaboration against Germany were shattered by the signing on August 24 of a Russo-German non-aggression pact, concluded under circumstances that indicated a far-reaching political agreement if not a military alliance. This sensational somersault by both Hitler and Stalin ended Polish hopes that they could obtain British and French war supplies through Russia. It also forced Rumania to declare its neutrality in the subsequent conflict and thus prevented supplies from reaching Poland through Rumanian Black Sea ports.

Despite the obvious danger of their isolated position, the Poles refused to budge from their firm stand toward Germany. On August 10 Colonel Beck had again warned the Berlin government not to interfere with Poland's rights in Danzig. On August 16 the German demands were increased to include return of all former

German territory from Poland. In their refusal to consider such terms, the Poles were firmly supported by the British and French Governments, which insisted that Polish-German issues must be settled by peaceful negotiation rather than under the threat of German armed force. The final diplomatic negotiations were conducted largely between the German, British, and French governments. However on August 25 President Moscicki accepted President Roosevelt's proposal for a peaceful settlement of the German-Polish dispute. The Warsaw authorities also acceded to Anglo-French admonitions to avoid provocative incidents so far as possible. Neutral correspondents in Poland on the eve of the conflict reported that the German charges of Polish atrocities against the German minority were either entirely false or greatly exaggerated.

On August 30 developments in Germany led the Poles to commence general mobilization. The following day Warsaw announced its readiness to accept the British proposals for German-Polish negotiations. But with the ratification of the German-Russian non-aggression pact by the Supreme Soviet on August 31, Hitler was ready to strike. Early the following morning began the invasion that in the short space of six weeks completed the doom of the Polish state.

See CZECHO-SLOVAKIA, FRANCE, GERMANY, GREAT BRITAIN, HUNGARY, ITALY, LITHUANIA, RUMANIA, and UNION OF SOVIET SOCIALIST REPUBLICS under *History*. Also JEWS; MILITARY PROGRESS; NAVAL PROGRESS.

POLAR RESEARCH. *Antarctic.* Interest in the Antarctic region in 1939 far surpassed that bestowed on the Arctic. The most ambitious enterprise of exploration in years was the Third Byrd Antarctic Expedition, financed mainly by an appropriation of the United States Government, and carrying, in two ships, about 125 enlisted men, 4 Naval officers subordinate to Byrd, and a number of scientific men. These vessels, the *North Star* and the *Bear*, left Boston, December 15 and 22 respectively, and proceeded by the Panama Canal, the *North Star* touching at Pitcairn Island (q.v.), and reaching Wellington, N. Z., December 27. The two vessels were to unite about Jan. 1, 1940, near Little America, about the 163d western meridian, at the Antarctic ice barrier. The expedition thus had still to reach its scene of operations when 1939 ended.

Though it had not yet begun its task, the character of this expedition, its plan, and the circumstances that sent it forth caused it to overshadow most of what had happened in the Antarctic subsequently to the attainment of the South Pole.

The character of the expedition was strongly governmental. Congress appropriated for it \$340,000 in the deficiency Appropriation Act of June 30. The President, July 7, directed the Secretaries of State, the Treasury, the Navy, and the Interior each to name a representative to a committee designed to advance the investigation of the Antarctic; the organization was by him named the U.S. Antarctic Service; and Rear Admiral Richard E. Byrd (U.S.N., Retired) was put in command of the expedition and made a member of the committee. The *North Star*, motor-driven vessel of the Coast Guard, was assigned to the expedition, and the *Bear*, a 68-year-old wooden barkentine with motor equipment, previously used by the Second Byrd Expedition, was again put into service. The equipment carried by these vessels exceeded in variety anything that had before been taken to

Antarctica; it included a motor vehicle of 27 tons, traveling on huge wheels, its cabin ample to house and shelter a considerable party, its design intended to justify its name of "snow cruiser." In addition to equipment for flying, the expedition took sled-dogs, tractors, and two light military tanks. The party went supplied for a stay until August, 1941, at least.

The main circumstance behind the purposes of the expedition was the manifestation of rising rivalry, among a number of governments, for possessions in Antarctica. All Antarctic land except an area between 80 deg. and 150 deg. W. had been claimed by one or more governments, before the formation of the new Byrd expedition, and early in 1939 the number of claimants had rapidly swelled. Norway asserted, January 14, sovereignty over such of these lands as lay between 20 deg. W. and 45 deg. E. Soon afterward the German press carried reports (March 10, by radio and in April from Cuxhaven) that a German expedition under Captain Ritscher, conveyed in the catapult ship *Schwabenland*, had flown over land (within the Norwegian claim) between 5 deg. W. and 15 deg. E., dropping or planting flags and claiming 135,000 square miles of territory for Germany on the ground of discovery.

Argentina, in turn, created in July a commission to draw up a claim to Argentine sovereignty over Antarctic land between 68 deg. W., approximately the meridian of the southern end of the Argentine boundary in Tierra del Fuego, and 20 deg. W., thus covering the main part of the Falkland Islands Dependency claim, which Great Britain had asserted in 1908 and 1917 (See ARGENTINA under *History*). Meanwhile Dr. Lincoln E. Ellsworth (see below) had dropped a proclamation from an airplane in January, claiming for the United States an area extending to either side of 80 deg. E., within the Australian claim of 1933. Norway, interested in maintaining her Antarctic claim (useful to her whaling industry), proposed early in the year a congress on Polar matters, to be held in Bergen in July, 1940.

Other Expeditions. Dr. Lincoln E. Ellsworth completed the voyage begun in 1938. His ship, the *Wyatt Earp*, reached the neighborhood of the Antarctic glacial barrier, about 80 deg. E. and 68 deg. S., early in January, 1939, and was much delayed by the intervening pack ice. Before heading north again about January 23, Ellsworth made a flight by airplane, extending south over the Antarctic mainland along the approximate line of 79 deg. E.; he viewed the surface over a number of degrees on either side. He reported noting, as evidence of the retrogression of the glacial edge, that the highest parts of islands now fully exposed showed much more erosion than exposed eminences farther to the south.

Ellsworth returned via Tasmania in haste, as Liavaag, his chief officer, had been injured in a fall and needed surgical attention. He asserted a claim, on the ground of discovery, to the inland area (but not the coastal strip) that he had viewed by airplane. This involved the controversion, in part, of the earlier claim of Australian domain, based on the British investigations of the coast prior to 1933 and applying to the whole quadrant below Australia.

The British royal research ship *Discovery II* returned to London in May from her fifth voyage of research in Antarctic waters. This voyage took 20 months. The vessel covered about 100,000 miles. Several scientists were employed; they made ex-

tended observations, chiefly of matters connected with the life-economy of the Antarctic whales; the study was for the advantage of the profitable British whaling industry in these waters.

Arctic Exploration. The manuscript found on Henrietta Island (see YEAR BOOK, 1938, p. 613) and identified as left by the De Long expedition was examined in Moscow and was reported to be undecipherable. It had been regarded as virtually certain that this manuscript was the one cached by Lieutenant Melville of the expedition; hope had arisen that it might prove legible in part at least and might give new light on the experiences of the ill-fated expedition of 1879-80.

Ivan Papanin, who had commanded the Russian ice-drifting expedition of 1937-39, directed thereafter the Russian Soviet government's Northern Sea Route Administration, an effort to establish marine freight service over Arctic waters, along the northern coast of Russia and Siberia. He reported that 104 vessels had engaged in this service in the open season of 1939 and that more had been accomplished than had been projected for the year. Cargoes, Papanin stated, were unloaded at the mouths of the rivers Lena, Yana, Kolyma, Indigirka, Anabara, Oleneka, and Khatanga. Of these outlets, the mouths of the Yana and Indigirka had theretofore been considered impossible of approach by ship.

In North Spitsbergen was found early in the year wreckage apparently from the German Schroeder-Stranz expedition of 1912. On the eastern coast of Greenland a French explorer, Count Gaston Micard, encamped with a party, was taken ill and was brought out in response to an appeal by radio. The Norwegian ship *Vesle Kari* responded to the call. By use of dynamite against intervening masses of ice, the vessel made her way as near as possible and an airplane brought off Micard, later carrying him to Oslo. The Russian ice-breaking ship *Syedoff* (or *Sedov*) held in Polar ice for more than two years, was reported at the end of December as about to emerge into open water, between Greenland and Spitsbergen; this vessel had been borne from the Russian side of the Arctic expanse, to within a few degrees of the North Pole, and thence down the same southward current by which formerly the *Fram* and lately Papanin had emerged.

Canada again sent out the yearly Eastern Arctic Patrol. It departed, July 8, on the Hudson's Bay Company's ship *Nascopie*, bound on a tour of 12,780 miles, to make 22 main visits and serve some 48 posts and outposts. It included a scientific division; in the personnel of this division were men qualified to study physical geography, biology, zoology, diseases of carnivorous mammals, and the dental conditions among the Eskimos. Preparations were made for catching live lemmings, from which to breed a supply for the laboratory at Macdonald College.

See EXPLORATION.

POLISH CAMPAIGN. See EUROPEAN WAR.

POLISH CORRIDOR. See EUROPEAN WAR; GERMANY, DANZIG, and POLAND under *History*.

POLISH NATIONAL CATHOLIC CHURCH OF AMERICA, a church founded in 1897 by Prime Bishop Francis Hodur. See RELIGIOUS ORGANIZATIONS.

POLITICAL ACTIVITIES. See UNITED STATES; COMMUNISM; DEMOCRATIC PARTY; REPUBLICAN PARTY; SOCIALISM.

POLITICAL ACTIVITY, RESTRICTION OF.

It is a well recognized, if not approved, feature of American politics that the official power to confer benefits carries with it the opportunity to win votes. The partisan opposition to the Administration complained in the National campaign of 1936 that the party in power was making undue use of the Federal dispensing agencies to assure to its own candidates the vote of the dependent citizens. The same charge was repeated in the campaign of 1938. The 76th Congress, assembling in 1939, contained enough opponents of the Administration to enact, with the moral aid of a plea for reform, a statute to restrict the political activity of Federal officials and otherwise to protect voters from compulsion.

This measure, the Political Activity Act (signed August 2), or Hatch Act, made unlawful seven methods to put pressure on voters: 1, intimidation, threat, or coercion by any person, affecting any one's free exercise of the right to vote for a candidate for Federal office; 2, a Federal employee's use of his authority to affect the election of such a candidate; 3, promise, by any person, of employment on any Federally supported undertaking, as a reward for any political activity; 4, removal of, or threat to remove any one from a Federally supported employment or other benefit in the classification of poor-relief, for race, creed, color, or political activity; 5, any person's solicitation or receipt of an assessment or a contribution for a political purpose, from anyone getting or entitled to poor-aid out of a Federal appropriation; 6, the revelation, by any person, for political purposes, of a list of names of such persons to a political candidate, committee, or campaign manager, and the receipt of a list, by such a recipient; 7, the use of money out of any such appropriation, or of authority conferred in the appropriating act, in order to restrain or coerce the exercise of an individual's right to vote. Penalty for violating any of these prohibitions was a fine of not over \$1000 and imprisonment for not over a year, either or both. The Act put other restrictions on political activity: no person in the executive branch of the Government might use official authority to interfere with an election or affect its result; nor might any such person take part in political management or in a political campaign (beyond voting and expressing opinions); but the President, Vice-President, those paid from appropriation for the Office of the President, the heads and assistant-heads of departments, and the policy-making appointees confirmed by the Senate were exempted from this sweeping outlawry of political activity; finally all persons in the Federal Government were forbidden to be members of any political party or organization advocating the overthrow of constitutional government in the United States, and those transgressing this prohibition were to be removed from their posts.

This act originated in the Senate, where at the outset of the session Senator Hatch, New Mexican Democrat, and Senator Austin, Vermont Republican, offered measures containing its primary features. The President made no public opposition to the bill, beyond offering the counter-proposal that Congress put the administrative employees of the WPA into the Civil Service. After passing the Senate without great difficulty in April, the bill drew increasing attention while in the House. Here it passed, by vote of 243 to 133, July 20; of those voting for it, 83 were

dissident Democrats chiefly from Southern States, who thus threw in their forces with the Republican block, to overthrow the Democratic regulars. The bill's final prohibition, against Federal employees' membership in subversive groups (which to most minds connoted Communists), came as a late amendment in the House. Sent back to the Senate, the bill passed that body, July 21, "without opposition," a course that obviated a count of the Democratic stalwart minority. The majority leader, Barkley of Kentucky, who had incurred prominence in connection with politics in the WPA during the campaign of 1938 in his State, labored under a handicap in directing whatever opposition the Senate might have mustered; he was reported not to have been in the Senate chamber when the bill passed finally. The President signed it five days later. A measure to restrict some State employees was offered in the Senate.

POLITICAL AND SOCIAL SCIENCE,

THE AMERICAN ACADEMY OF. A national forum for the discussion of political and social questions, founded in Philadelphia in 1889, and incorporated in 1891. The organization takes no sides upon controversial questions. Its aim is to secure and present reliable information to assist the public in forming an intelligent opinion.

The 43rd Annual Meeting held March 31 and Apr. 1, 1939, considered the general subject "Democracy and the Americas." On October 14, the Academy was addressed on the subject of "American Foreign Policy" by Senator Elbert D. Thomas, and Drs. Edwin M. Borchard, Frederick J. Libby, and Charles G. Fenwick. "The Roots of Totalitarianism" (in Economics, in Politics, and in Philosophy) was the topic of the November 18 meeting. The speakers were Drs. Moritz J. Bonn, Robert M. MacIver, and Ralph Barton Perry.

The Annals, issued bimonthly, is the official organ of the Academy. Each issue is devoted to a particular topic of economic, political, or social importance. Topics considered in 1939 were: "Ownership and Regulation of Public Utilities"; "Appraising the Social Security Program"; "Refugees"; "Democracy and the Americas"; "Frontiers of Legal Aid Work"; and "Government Expansion in the Economic Sphere."

The Academy has established a monograph series, the first of which was a study on *Private Police with special reference to Pennsylvania*, prepared by Dr. J. P. Shalloo; the second, a study on *The Negro as Capitalist* by Dr. Abram Harris; and the third, a study on *The Turkey of Atatürk* by Donald Everett Webster.

In the pamphlet series inaugurated by the Academy, the following publications have appeared: No. 1, *Economics of Planning*; No. 2, *Financing New York City*, by William Whyte; No. 3, *Some Statistical Aspects of Marriage and Divorce*, by Dr. I. M. Rubinow; No. 4, *Modernizing Our State Legislatures*, by A. E. Buck; No. 5, *The Economics of Isolation*; No. 6, *Constitutional Rights*, edited by Dr. Herbert F. Goodrich; and No. 7, *Democracy versus the Totalitarian State in Latin America*, by Dr. Samuel Guy Inman.

The officers in 1939 were: President, Ernest Minor Patterson; Secretary, J. P. Lichtenberger; Treasurer, Charles J. Rhoads; Vice-Presidents, Herbert Hoover, Carl Kelsey, and Clarence A. Dykstra. Headquarters are at 3457 Walnut Street, Philadelphia, Pa.

POLITICAL ECONOMY. Subjects in the field of applied economics are treated in this volume under the following heads: BANKS AND BANKING; BUSINESS REVIEW; CO-OPERATIVES; FINANCIAL REVIEW; HOUSING; LABOR CONDITIONS; LABOR LEGISLATION; OLD-AGE PENSIONS. See also such articles as AMERICAN FEDERATION OF LABOR; CONGRESS OF INDUSTRIAL ORGANIZATIONS; SOCIALISM; RELIEF. See also the article on AGRICULTURE and the various crops. Further discussions are to be found in articles on the several industries, minerals, public utilities, etc. Books on political science and economics for the general reader are to be found listed in the article, LITERATURE, ENGLISH AND AMERICAN, under *Economics* and *Politics*.

POLITICAL GEOGRAPHY. See GEOLOGY.

POLITICAL REFUGEES. See INTERGOVERNMENTAL COMMITTEE ON POLITICAL REFUGEES; REFUGEES.

POLITICAL SCIENCE, ACADEMY OF. An international learned society for advancing the political sciences and their application to political, economic, and social problems, founded in 1880 in New York City and incorporated in 1910. Its membership on Dec. 31, 1939, numbered 7076, of whom 6 were honorary members, 225 life members, 5551 annual members, and 1294 subscribing members, chiefly libraries and organizations. At the semi-annual meeting on May 3, 1939, in New York City "The Preservation of Democracy—America's Preparedness" was discussed.

At the fifty-ninth annual meeting on November 15 the topic under discussion was "The Effect of the War on America's Idle Men and Idle Money." The officers for 1939 were: W. Randolph Burgess, president; Albert Shaw and R. C. McCrea, vice-presidents; Noel T. Dowling, secretary; John A. Krout, editor of publications; Leon Fraser, treasurer; and Miss Ethel Warner, director and assistant treasurer. Headquarters were in Fayerweather Hall, Columbia University, New York City.

POLO. See SPORTS.

PONAPE. See JAPANESE PACIFIC ISLANDS.

PONDICHÉRY. See FRENCH INDIA.

PONTON BRIDGES. See BRIDGES.

POPE, SIR WILLIAM JACKSON. A British chemist, died in London, Oct. 17, 1939, where he was born on Mar. 31, 1870. Educated at Finsbury Technical College and the Central Technical College, London, during 1897-1901 he was head of the chemistry department at Goldsmiths' Institute, London. He was professor of chemistry and head of the department at the Municipal School of Technology in Manchester, and in 1905 joined the faculty of the University there as professor of chemistry. In 1908 he joined Cambridge University as professor of chemistry and as a fellow of Sydney Sussex College.

His early researches were in crystallography, and he discovered, with William Barlow, the connection, in relation to valency, of chemical constitution and crystal structure. In 1915 he was a member of the Panel of Consultants of Lord Fisher's Admiralty Inventions Board and his work on poison gases enabled the Allies to produce mustard gas faster than could the Germans. For his work he was knighted in 1919. Other of his researches included a special study of asymmetric compounds.

One of the leaders of British chemistry, Sir William received many honors, including the Longstaff medal of the Chemical Society (1903),

the Davy medal of the Royal Society (1914), the Dumas medal of the Société de Chimie industrielle (1921), the Messel medal of the Society of Chemical Industry (1932). He was Thomas Graham lecturer at Glasgow (1914), Mukherjee lecturer at the University of Calcutta (1921), and James Watt Lecturer at Greenock (1923) and served as president of the Chemical Society (1917-19), the Society of Chemical Industry (1920-21), the International Union for Pure and Applied Chemistry (1922-25) and of the Solvay Chemical Conference, Brussels (1922-36).

His writings on crystallography and organic chemistry appeared mostly in the *Transactions* of the Chemical Society and the *Proceedings* of the Royal Society.

POPULAR FRONTS. See CHILE, FRANCE, and SPAIN under *History*; COMMUNISM.

POPULATION MOVEMENTS. See IMMIGRATION AND EMIGRATION; VITAL STATISTICS; articles on all foreign countries under *Area and Population*; REFUGEES; AGRICULTURE.

PORK AND PORK PRODUCTS. See LIVESTOCK.

PORTO SANTO ISLAND. See MADEIRA.

PORTS AND HARBORS. See IRAN under *History*; KOREA, MANCHOUKUO, TANGIER, and THAILAND.

PORTUGAL. A republic of southwestern Europe. Capital, Lisbon (Lisboa).

Area and Population. The area is 35,582 sq. mi. (continental, 34,386; Azores and Madeira, 1196), and the population was estimated at 7,460,000 on Jan. 1, 1939 (6,825,883 at the 1930 census). Living births in 1938 numbered 199,467 (26.9 per 1000); deaths, 115,331 (15.5 per 1000); marriages, 49,016 (6.6 per 1000); divorces, 822. The 1930 populations of the chief cities were: Lisbon (Lisboa), 594,390 (1936 estimate, 650,000); Oporto (Pôrto), 232,280; Setúbal, 46,398; Funchal (in Madeira), 31,352; Coimbra, 27,333; Braga, 26,692; Évora, 22,061.

Colonial Empire. The total area of Portugal's possessions is approximately 808,362 sq. mi.; the total population was estimated at 9,405,000 in 1938. The colonies are treated individually in the YEAR BOOK under the following separate headings: In *Africa*: ANGOLA, CAPE VERDE ISLANDS, PORTUGUESE GUINEA, SÃO THOMÉ AND PRÍNCIPE, and MOZAMBIQUE; in *Asia*: PORTUGUESE INDIA, MACAO, and TIMOR, PORTUGUESE.

National Defense. Military service is compulsory. On Nov. 1, 1939, the army consisted of 55,800 active soldiers and 460,000 trained reserves, according to the Adjutant General's Office, Washington, D. C. The air force comprised 986 men and 150 aircraft. The navy (at the beginning of 1939) was composed of 7 escort vessels, 6 destroyers, 2 torpedo boats, 7 gunboats, 3 submarines, 1 sailing training ship, 3 surveying vessels, 3 river gunboats, 1 transport, and 5 auxiliary service ships. The personnel was 736 officers and 5602 men on Jan. 1, 1938. See MILITARY PROGRESS.

Education and Religion. About 52 per cent of the population over seven years of age are illiterate. School attendance in 1936-37 was: Primary, 519,336; secondary, 31,505; technical, industrial, and commercial, 28,386; university, 7896. The great majority of Portuguese are Roman Catholics but freedom of worship is granted other faiths.

Production. Agriculture, the principal occupation, is supplemented by fishing, mining, and manufacturing. About 60 per cent of the land is culti-

vated, 19 per cent is meadow, 15 per cent is uncultivated but cultivable, and 4 per cent is waste. Production of the chief crops in 1938 was: Wheat, 15,802,000 bu.; rye, 4,051,000 bu.; barley, 1,791,000 bu.; oats, 6,530,000 bu.; corn, 11,662,000 bu.; potatoes, 21,779,000 bu.; wine, 289,412,000 gal.; olive oil, 9,510,000 gal. Cork production in 1937 was 137,638 metric tons; wool, 3761 metric tons; canned sardines, 31,306 metric tons in 1938. Mineral production in 1938 was (in metric tons): Coal, 313,442; pyrites, 558,327; tungsten ore (wolframite), 2419; tin ore (cassiterite), 1525; titanium ore (ilmenite), 568; cement, 264,135. Industrial production in 1938 included 17,044 metric tons of paper, 61,405,334 lb. of cotton (net imports), 374,288 pairs of shoes, 1984 metric tons of enameled iron ware, and 44,146,372 lb. of macaroni and other alimentary paste.

Foreign Trade. Imports in 1938 were valued at 2,279,000,000 escudos (2,353,000,000 in 1937); exports at 1,138,000,000 escudos (1,202,000,000 in 1937). The chief exports in 1937 in the order of value were: Canned sardines, port wine, and textiles. For distribution of trade, see YEAR BOOK for 1938, page 614; consult also article in current volume on IMPORTS AND EXPORTS for trade with the United States in 1939.

Finance. Actual budget receipts in 1938 were 2,472,000,000 escudos (ordinary, 1,994,000,000) and expenditures were 2,469,000,000 (ordinary, 1,988,000,000). Estimates for 1939 placed revenue at 2,815,000,000 escudos (ordinary, 2,029,000,000) and expenditures at 2,813,000,000 (ordinary, 2,020,000,000). The net public debt on Jan. 1, 1939, was 6,354,000,000 escudos. The average exchange value of the escudo was \$0.0448 in 1937, \$0.0443 in 1938, and \$0.0404 in 1939.

Transportation. Portugal has about 2169 miles of railway line (including 450 miles of narrow gauge). Highways in 1939 extended 19,418 miles (see ROADS AND STREETS). The merchant marine consisted of 266 vessels of 100 tons or over, with a capacity of 269,118 gross tons. During 1938 a total of 9457 vessels of 30,309,910 gross tons entered Portuguese ports in the international and coastwise trade. Lisbon became the chief European base of the transatlantic air route opened by Pan American Airways in 1939 via the Azores and Bermuda.

Government. A constitution adopted March 19, 1933, fixes the form of the authoritarian government set up by a directorate of military and civil leaders in 1926. Under this constitution the chief executive power rests in a President elected for a term of seven years by popular vote, not universal, of men and women. The parliament consists of two bodies. One, the Corporative Chamber, has 79 members, all appointed and each representing a local area or an administrative, moral, cultural, or economic activity; the other, the National Assembly, has 90 members, elected for a term of four years, by popular vote. Political parties are not allowed, but the body known as the National Union is in effect a single party, nominating all candidates; the popular vote is cast for one approved candidate in each case. The President's powers are exerted mainly through a cabinet, which is not responsible to the parliament. The present National Assembly, the second under the existing constitution, was elected in October, 1938. The President is Gen. Antonio Oscar de Fragoso Carmona (re-elected Feb. 17, 1935). The Premier, Dr. Antonio de Oliveira Salazar, heads a cabinet reorganized Jan. 18, 1936; he is himself

Minister of War, of Finance, and of Foreign Affairs, and dominates the régime.

History. Portugal's course in foreign relations carried the country without mishap through the months that preceded the start of war between Great Britain and Germany. The peril of this period, for Portugal lay in the possibility that Germany and Italy would nourish their territorial appetite out of the Portuguese colonial empire, either with the support of Spain, whose government owed them a return for aid in overthrowing its predecessor, or by overawing Portugal's traditional protector, the British Government. The conclusion of the civil war in Spain ripened the moment for action on the German and Italian part in March or April. The Portuguese Government, however, negotiated with the Spanish Government of Franco, in March, a treaty of non-aggression, each agreeing to eschew for ten years any combination against the other and to help no aggression against the other. The treaty did not repay others' military services to Franco, but it repaid the Portuguese for the service of about 18,000 volunteers in Franco's forces and for the loss of about 8000 of these volunteers' lives in his cause.

The dispatch of a German fleet to the Mediterranean in April involved the presence of the German vessels for a time on the Portuguese coast; it thus occasioned fear of a rising against the Portuguese Government, for which the warships' arrival might give the cue. The situation in the spring thus led both the Portuguese and the British governments to enhance their estimates of the value of the ancient alliance. Salazar committed himself definitely, May 22, in an address to a special session of the Assembly; he warned that nations hunting for "living-space" might generate war; he reaffirmed the British alliance; and he justified Portuguese aid to Franco as fundamentally in harmony with the British interests.

The insecurity of the Portuguese position could not be said to have abated wholly until the British definitely challenged the moves of Germany in eastern Europe. The British declaration of war on Germany tended to strengthen the Portuguese foreign relations, to the extent of increasing the immediate value of the country's alliance. There arose no question of following Great Britain into war. Premier Salazar, addressing the Assembly on October 9, said: "Great Britain has asked nothing . . . that would oblige us to enter the conflict." The seemingly inconsistent position of neutral ally of a belligerent was maintained without special difficulty throughout the rest of 1939.

War had much to do with the development of Lisbon as a terminal for the first regular aeronautical travel across the North Atlantic Ocean. The Pan American Airways started, May 19, to carry mail between New York and Lisbon, with a stop at the Azores. The service began the transportation of passengers about a month later. After the war had made it difficult for either travelers or mail to make the trip between America and Europe by any other means, flights over this route became more frequent, until the purpose was announced, December 7, to make before long a departure a day, except Sundays.

Portugal suffered some troubles from the existence of a maritime war. Measures had to be taken to regulate the course of the escudo, with a view to its relation to sterling. Speculation in raw materials and essential foodstuffs was forbidden by decree. Failure to receive from England the usual supplies of coal compelled the authorities

to reduce the railroads' services early in October. Cotton for the textile manufactories ran short in September, prior to the season for the receipt of cotton from Portuguese colonies.

Domestic and Colonial Affairs. President Carmona made a trip of three months to visit the Portuguese colonies in Africa (June 18-September 12). The government sought further, during the year, to accelerate its construction of housing for urban classes of earners of low incomes. This policy gave it what was conceived as a long-range weapon for reducing politico-social disaffection, still evidenced in occasional round-ups of plotters and in their departures to places of confinement.

See also **MILITARY PROGRESS**; **NAVAL PROGRESS**; **SPAIN under History**.

PORTUGUESE EAST AFRICA. See **MOZAMBIQUE**.

PORTUGUESE GUINEA. A Portuguese colony in West Africa. Area, 13,944 square miles; population (1938 estimate), 420,000. Capital, Bolama. The principal commercial products are rice; palm oil (900 metric tons, 1938); palm kernels (6000 metric tons, 1938); and groundnuts (31,500 metric tons exported in 1938-39 season). In 1937 imports were valued at 36,641,873 escudos; exports, 38,535,306. The budget for 1938 was balanced at 26,181,396 escudos. (Escudo averaged \$0.0448 in 1937 and \$0.0443 in 1938.) There are about 1863 miles of roads in the colony. In 1936, 104 vessels of 159,761 tons cleared the ports; besides 2808 steamers of 66,121 tons in the coasting trade.

PORTUGUESE INDIA. The Portuguese possessions in India, comprising Goa, Daman, and Diu. Total area, 1537 square miles; total population (1938 estimate), 600,000. Capital, Panjim (or New Goa). Manganese (1800 metric tons, 1937); copra (300 metric tons exported in 1938); spices; and caju-nuts were the chief products. Trade is largely transit. In 1938, the estimated value of merchandise imports (in old U.S. gold dollars) was \$2,400,000; exports, \$500,000. There are about 730 miles of roads and 51 miles of railway lines. The budget for 1938 was balanced at 52,611,577 escudos (escudo averaged \$0.0443 in 1938). Governor-General, Col. José R. P. Cabral.

PORTUGUESE WEST AFRICA. See **ANGOLA**.

POST OFFICE DEPARTMENT. Oldest and largest of Federal functions, a going concern when it was securely fixed in the Constitution, the U.S. Post Office Department is the executive agency for the administration of the laws of Congress in the form of postal service. Over 400,000 persons earn their living in the mail establishment, three-fourths in civil service and the remainder under contract. More than half of all regular government employees are engaged in the inter-communication of 45,000 post offices and the postal contact with the rest of the world, as well. See **STAMP COLLECTING**.

Every known method of transportation is used to collect, move and deliver the flow of letters, parcels and reading matter in motion between people and industry in the never-ending exchange of goods and services. Special delivery, registry, insurance, and air mail are offered at additional fees, and the money-order service and the facilities for postal savings and the purchase of "baby bonds" all go to make up a complete net-work in the fabric of our civilization. It is, too, a strong, vital social force for good.

For the past five years postal earnings have

been increasing because of the greater hire of postal facilities by the public. From a low point in 1934 the total gain has been \$159,228,909, or 27 per cent to the end of the last fiscal year—June 30, 1939. In the same period postal expense has risen in consequence of increased volume of mail and statutory enactments for the benefit of postal employees. Again from a low point in 1934 the total increased cost has been \$153,879,937, or 24 per cent. This is a true measure of postal progress, for while earnings in fiscal 1939 are again an all-time high in postal history, 1939 expense is nineteen millions less than the all-time high of 1930. In sustaining an increase in the volume of business, costs have been controlled.

For the twelve months ended June 30, 1939, the statutory fiscal year in government, the huge transactions from innumerable sources that produce postal service, are seen from the total cash turnover for the year at \$7,860,802,407, as issued by the Comptroller General of the United States. It is more than all money in circulation at any one time and it equals almost fifty dollars from each man, woman, and child in the population, passing through post offices each year in cash. The audited financial result for fiscal 1939 is a net postal surplus of \$14,547,795, the fifth surplus in the past six years. The main statistics are:

Audited expenditure	\$784,646,938
Audited revenue	745,955,075
Gross postal deficit	38,691,862
Deduct Nonpostal items	53,239,658
Net postal surplus	\$ 14,547,795

During the latter part of calendar 1939 there has been serious disruption of postal service with European countries on account of the lack of normal transportation facilities due to war conditions. The volume of both incoming and outgoing mail has decreased about 35 per cent and transportation costs have been increased considerably on account of circuitous dispatch necessary to reach both belligerent and neutral countries.

JAMES A. FARLEY.

POTASH. Conditions in the domestic potash industry in 1939 were in marked contrast to those prevailing in 1914-18, when the United States was dependent on German and other sources for domestic needs. During the World War Germany forced the cancellation of contracts resulting in an estimated loss to American buyers of about \$28,000,000. Subsequently the Congress authorized the Geological Survey to conduct explorations for potash deposits in the United States. Resulting discovery and development of large deposits in the vicinity of Carlsbad, N. M., assured this country of an adequate supply of this mineral fertilizer. In 1939 two producers were active in New Mexico and one in California, all on public land. A third large operator in New Mexico began development work in 1939, and expected to be in production in 1940. During 1938 domestic production was 68 per cent of domestic consumption of 467,000 tons. The industry gives assurance that it can supply all United States needs despite curtailment of imports on account of the war in Europe. Reserves in New Mexico alone are estimated at 70,000,000 tons in the 60 sq. mi. under development. Domestic potash prices were fairly stable in 1938 and 1939 at about 53¢ per unit (20 lb.) contained in muriate salts. Germany is

still the largest producing country, with the United States and France about on equal terms in second place. See FERTILIZERS.

H. C. PARMELEE.

POTATOES. The 1939 potato crop of the United States was estimated at 360,992,000 bu. harvested from 3,031,700 acres averaging 119.1 bu. compared with 374,163,000 bu. in 1938, 3,022,600 acres, and 123.8 bu.; and the 1928-37 average of 372,258,000 bu., 3,343,400 acres, and 111.4 bu. The 18 surplus late potato States produced 258,053,000 bu. and were led by Maine with 38,250,000 bu., Idaho 29,670,000, New York 26,797,000, Michigan 24,250,000, and California 22,644,000 bu. The 12 other late potato States made 39,938,000 bu. with Ohio 12,600,000 bu. leading the group. These 30 late potato States made a total of 297,991,000 bu. The 7 intermediate potato States led by New Jersey with 7,480,000 bu. totaled 27,617,000 bu., and the 11 early potato States led by North Carolina with 8,200,000 bu. and Alabama with 4,860,000 bu. totaled 35,384,000 bu. The seasonal average price per bushel received by farmers in late potato States was 66.9¢, in intermediate States 77.1¢, and in early States 78¢, or a National average of 68.8¢ and an estimated value of production of \$248,226,000 in 1939 compared to 55.8¢ and \$208,835,000 in 1938.

Production (1939) reported from other leading producing countries included Germany 2,067,975,000 bu., Netherlands 110,330,000, Hungary 86,883,000, Lithuania 77,294,000, Sweden 71,469,000, Rumania 66,652,000, and Canada 58,867,000 bu. The 1938-39 crop in France amounted to 636,189,000 bu., Italy 108,356,000, Poland 1,269,777,000; and the U.S.S.R. 1,541,740,000 bu. World production in 1938-39, 32 countries reporting, was estimated at 5,839,544,000 bu. See *Production* under individual countries.

HENRY M. STEECE.

POULTRY. Abundant feed in 1939 resulted in heavy production of various classes of poultry and eggs. There were about 40,400,000,000 eggs produced, amounting to 3 per cent more than in 1938, and 2,380,000,000 lb. of chicken on a dressed weight basis, 6 per cent more than for 1938. Hatching of chicks by commercial hatcheries was the largest on record, about 21 per cent in excess of 1938. The heavy hatching of broilers in commercial hatcheries was attributed to increased farmer purchases and continuation of the shift from home to commercial hatching of broilers. Another new development, to which some consideration at least has been given, involved raising hens in batteries without giving them access to ranges.

Egg production was consistently above 1938 production; however, egg prices were about 11 per cent lower. The feed-egg ratio based on Chicago prices was much less favorable than during 1938, but it was more favorable than during the period 1928-38. This trend suggested that egg production in 1940 would probably show some decrease. Chicken prices were about 9 per cent lower than in 1938.

The turkey crop of 1939 was estimated at 431,000,000 lb., an increase of 22 per cent over 1938 production. Intentions to expand turkey output were confirmed by the increase of some 50 per cent in the hatching of poults at commercial hatcheries. Along with the expansion in turkey production, the U.S. Bureau of Animal Industry

was attempting to breed a so-called streamlined turkey which finished at an earlier age and lighter weight. It was intended to produce carcasses suitable for year round consumption where smaller birds are desired.

Research with poultry progressed in accord with advances made in research with other classes of livestock.

Perosis in chicks was found by the Wisconsin Agricultural Experiment Station to be correlated with the bone and blood phosphatase activity. Low phosphatase activity occurred in birds with perosis. The slipped tendon condition in poultry was found to be related to a manganese deficiency in the ration, in further studies at the same station. Variations in hatchability of the eggs of birds on low manganese rations were associated with the amount of sunlight during the two weeks prior to hatching. How sunlight could have a sparing action on the requirement of manganese was not clear.

Some of the contributions that have been made by research to the poultry industry are admirably and adequately discussed by Dr. L. E. Card in his paper presented before the Seventh Worlds Poultry Congress. This paper gives an account of research conducted over many years, but during 1939 there was special advance in the physiological studies of egg formation, incubation, and artificial insemination. The studies of limits of tolerance for developing embryos with respect to temperature, humidity, oxygen, and carbon dioxide has resulted in the construction and perfection of large incubators, which have been operated largely in an automatic manner, controlling various environmental factors within very narrow ranges. The knowledge of sex linkage was applied to sex determination at hatching, and genetic methods were successfully adapted in solving the problem of broiler feathering and breeding for disease control. See LIVESTOCK; VETERINARY MEDICINE.

The Kansas Agricultural Experiment Station found by alternating feeds of different xanthophyll content, which color the yolk in which it is deposited, that the rate of yolk metabolism decreased slightly during the early morning hours. A test for determining freshness in eggs, based on the buoyancy of the whole egg, was developed at the Indiana Agricultural Experiment Station. As eggs age, they lose buoyancy, as determined by the buoyancy number.

Turkey hens could be brought into earlier production by the use of artificial light in the morning and evening at the Iowa Agricultural Experiment Station. It was thus possible to hatch the poults earlier and get them on the holiday markets with better finish and maturity.

Bibliography. *Proceedings of the Seventh Worlds Poultry Congress and Exposition, United States, 1939*; and *Federal Poultry Research*, at the Agricultural Research Center, Beltsville, Md. (U.S. Dept. Agr., Misc. Pub. 368; 1939); *Turkey Management*, S. J. Marsden and J. H. Martin (Danville, Ill.: The Interstate Press; 1939).

GEORGE HAINES.

POWER PLANTS. The present installed capacity of power plants supplying energy for public use in the United States is about 39 million kilowatts, of which 28 million is in steam stations and 11 million in water-power plants. Of this total, according to the Federal Power Commission, private ownership accounts for 89 per

cent. Accurate figures on the installed capacity of industrial power plants will not become available until results of the 1940 Census are compiled, but it has been authoritatively estimated that such plants account for about 20 millions kilowatts.

Construction in the power plant field was active during 1939, 1,300,000 kw of steam capacity having been added in central stations and 220,000 kw of hydro power in Federal projects. Work now in progress, for completion in 1940 and 1941, will add 2,800,000 kw to the former and 1,415,000 kw to the latter. Much new industrial power plant construction is also under way. While the greater part of the capacity added during the preceding five or six years was in high-pressure "topping" units or extensions to existing plants, last year marked the beginning of a decided trend toward new plant construction.

An outstanding co-operative arrangement between a utility and industrial plants was consummated on the Pacific Coast where at each of three large oil refineries three 200,000 lb. per hr. boilers are being installed to operate at 1500 lb. pressure and 950°F. total steam temperature. The steam will be supplied to high-pressure turbines, much of the power from which will go to the utility system and the exhaust will be utilized in refinery processes.

In general, there was no tendency to exceed or to equal the capacity of some units long in service; nor, with two exceptions, have previously established high pressures been exceeded. These two exceptions are a central station extension designed to operate at 2400 lb. per sq. in. and an industrial power plant of 10,000 kw capacity which went into service during the year at 2200 lb. pressure. Both installations employ natural circulation boilers.

A survey by the author of new construction in the central station field during 1939, covering 91 steam generating units, showed 33 designed for operation at 1200 to 1500 lb. pressure, as compared with 56 units of 700 to 900 lb. pressure. Incidentally, there were already in service over 90 units operating at the higher pressures. Over two-thirds of the new installations employed steam temperatures of 900 to 950°F. and burned pulverized coal. Only eight units were stoker-fired and the remainder will burn gas or oil with provision in most cases for changing over to pulverized coal if desired. In practically all cases heat-recovery equipment in the form of economizers or air preheaters, or both, was provided. The multi-drum bent-tube type of boiler predominated among the larger units and the two-drum self-contained type for capacities under 200,000 lb. of steam per hour. A number of radiant and special boiler types were included. Superheat control, by means of bypass dampers, and automatic combustion control were employed in the majority of cases. Refinements in design, based on operating experience during the last two or three years, rather than innovations or marked departures from current practice, characterized these units.

With the advent of high steam temperatures, practice in the United States, except in a few special cases, has practically abandoned the reheat cycle, by which steam is resuperheated between the high- and the low-pressure elements of the turbine. In England, however, the reheat cycle is still employed to a considerable extent. Both here and abroad the regenerative cycle of stage

extraction for feedwater heating has now become standard.

For the fourth successive year the Port Washington Station of the Wisconsin Electric Power Co. maintained the world's record for economy, the station heat rate for 1939 being 10,770 Btu per kw-hr. This has one 80,000-kw condensing turbine-generator supplied by a single boiler with steam at 1350 lb. pressure and 830°F.

Industrial steam power plant practice during the year continued to capitalize upon pioneering in the central-station field through the adoption of refinements leading toward greater economy. Pressures of 400 to 750 lb. per sq. in. were employed in the majority of new large and medium size plants, depending upon the proportionate requirements of power and process steam. Some of the smaller plants employed lower pressures and a few large installations higher pressures. In most cases where exhaust or extracted steam is used for process the initial steam temperatures were limited to 700 or 750°F., although in some of the condensing installations high steam temperatures were employed.

The more-or-less standardized, two-drum, self-contained steam generating unit is finding wide acceptance in the industrial power plant field. Firing is with pulverized coal, oil, gas or stokers, depending upon local conditions, although pulverized coal predominates among the larger units and stokers among the smaller. Installations of spreader type stokers have increased, particularly in the Middle West.

Improvements in equipment include a reduction in the power consumption of pulverizers and refinements in stoker design. Motion pictures, employing both colored and infra-red films, have lately been used extensively for studying combustion and furnace conditions.

Steam washers are now regarded as essential with high-pressure boilers and their use is being extended in the field of medium pressures, above 400 or 500 lb. These washers, of which several designs are available, are placed in the steam drum of the boiler and operate on the principle of exchanging the entrained boiler water of high solids concentration for feedwater of low concentration; in other words, the steam is washed with the relatively pure feedwater and as much of the moisture as possible is then removed by passing the steam over screens. In this way excessive deposits are prevented from being carried over into the turbine where their accumulation on blading reduces capacity and necessitates frequent outage for removal.

Feedwater conditioning and control continues as a major problem in the operation of high-pressure boilers, although much progress has been made. Research on caustic embrittlement, or intercrystalline cracking of the metal, was continued during the year at the University of Illinois Experiment Station and by the U.S. Bureau of Mines at the University of Maryland. The latter has developed an embrittlement detector which is now undergoing extensive laboratory and field tests.

Cases of caustic embrittlement are becoming fewer, on account of the extensive use of welded drums, improved design, and better workmanship in their fabrication. No cases have been reported in high-pressure boilers where welded drums are employed, nor in riveted construction for lower pressures where the seams have been properly and exclusively internally caulked. A

few cases of embrittlement of tube ends were reported.

Equipment for fly ash and cinder recovery from the stack gases has now become general in connection with new central-station installations and many industrial plants that burn pulverized coal in densely populated areas have also adopted it.

The high availability of modern steam generating units has been responsible for extension of the practice of providing one boiler per turbine. This applies to both central stations and industrial plants.

Advances in metallurgy have caught up with practice in the design of boilers, piping, and turbines, and both research and test data have enabled closer designing for capacity and performance. Present indications are that the employment of steam temperatures over 950°F. would increase the investment in special alloys to an extent that would not be warranted by the small increased efficiency. The application of welding has been extended greatly in both shop and field fabrication, based upon the results of research in weldable steels and improved methods of stress relieving, testing, and inspection. Carbon-molybdenum steel is now widely used in the construction of boilers, piping, and fittings for high pressures and high temperatures.

Practice in the United States, as concerns steam conditions and designs, is still far from being standardized, although some efforts in that direction are discernible, notably as regards the preferred standards prescribed for steam turbines in 1938 by National Defense Power Committee which are being followed where conditions permit. In contrast to the situation in this country, Germany has adopted rigid standards for all new condensing installations. These prescribe, as applicable to different types of plants, 4 steam pressures, 2 total steam temperatures, 12 boiler capacities, 2 feedwater temperatures, and certain specified boiler types. Turbine sizes are covered and standard plant arrangements provided, as well as standards for all auxiliaries, piping, and fittings. Compliance with these standards is understood to have Government backing.

British practice is now forging to the front in line with American practice. Many new plants have been constructed or projected and extensions made to existing stations. While the majority employ steam generating units of medium capacity and moderate pressures, of the order of 400 to 600 lb., a few have gone to 1200 lb., and during the year one installation went into service with large boilers of the Loeffler type designed for 2000 lb. per sq. in. Another station placed in operation a large unit of the La Mont forced-circulation type. Steam turbines of 50,000 to 60,000 kw capacity are now common in British power stations and one is on order for 100,000 kw, but the practice of employing one boiler per turbine has not met with such favor as in the United States. Stokers rather than pulverized-coal firing seem to predominate in England.

On the Continent, in Germany and certain neutral countries, a number of underground bomb-proof power plants have been built for capacities up to 10,000 kw. These, in general, are designed to serve as emergency standby plants for transmission systems.

In the marine field steam pressures have increased, 400 to 600 lb. now being common. Some experimental installations for 1200 lb. and higher have been made by the Navy, and one boat to

employ 1200 lb. has been projected by the Maritime Commission. Automatic combustion control is gaining favor and many other refinements, previously found only in stationary power plants, are now being employed on shipboard. These, together with higher pressures and temperatures, have improved the economy of the marine steam power plant to the point that it is now comparable with the Diesel.

As for prime movers, with the exception of a 110,000-kw, 1200-lb. condensing turbine-generator placed in service at the Rouge plant of the Ford Motor Company and one central-station unit of 100,000 kw on order, no units of over 60,000-kw were installed in this country during 1939, although several of greater capacity were rebuilt. Hydrogen cooling for generators has received wide acceptance for 3600-r.p.m. machines from 25,000 to 60,000 kw capacity. Some difficulties were encountered with the high-pressure blading of 3600-r.p.m. machines operating with steam at over 1200 lb. pressure and 900°F. or more. These difficulties, however, are responding to changes in design and improved metals.

While the steam turbine has long held the central station field, its use has been increasing greatly in the industrial power plant field, both for condensing operation and where exhaust or extracted steam is employed for process. The advent of higher pressures in industrial plants has also favored it. However, steam engines, mostly of the uniflow type, are still employed for many office buildings, hotels, and institutional power plants where the pressures are under 250 lb. and the low-pressure exhaust steam is used for heating.

Extension of hydroelectric power was confined largely to Federal projects amounting to about 300,000 h.p., although very much more will be added during the next two years. Two additional units were put in service at Boulder Dam, raising its present capacity to 975,000 h.p. and making it the largest hydro plant in the world. Two more 115,000 h.p. units are on order. Capacity on order for the Grand Coulee development, for installation in 1941, will amount to 478,000 h.p. Four 103,000 h.p. units have also been ordered for the Shasta project in California. At Wheeler Dam (TVA) two 45,000 h.p. units were added, making the total capacity at this dam 180,000 h.p.

There have been an increasing number of installations of water turbines having adjustable runners, thus making it possible to develop power from low heads. Corrosion-resistant steel has been employed more generally for certain turbine parts and rolled steel and welding are taking the place of castings.

Because of the drought during the fall the output from hydro plants in the United States was 14 per cent less than that for the same period of 1938, reducing the hydro output for the year to 38 per cent of the total. This emphasized the necessity of adequate steam reserve to supplement hydro power in all cases.

See ELECTRICAL MACHINERY; ELECTRIC LIGHT AND POWER.

ALFRED D. BLAKE.

PRAIRIE PROVINCES. The popular name of the three Canadian provinces of Alberta, Manitoba, and Saskatchewan (q.v.). See CANADA.

PRATT INSTITUTE. A nonsectarian educational institution in Brooklyn, N. Y., founded in 1887 and composed of four schools: Fine and

applied arts, household science and arts, science and technology, and library science. The 1939 autumn enrollment was 5023. There were 253 members on the faculty. The library contained 146,017 volumes. President, Frederic B. Pratt, A.M., LL.D.

PRESBYTERIANS. A religious connection adhering to a system of church government by presbyters or elders. In the United States there are ten Presbyterian bodies, which had a combined membership of 2,570,415 in 1938, according to the Year Book of American Churches. The largest groups follow. (For statistics, see RELIGIOUS ORGANIZATIONS.)

Presbyterian Church in the United States of America. This is the largest body of the Presbyterian communion, being represented by churches in every State of the Union and having official mission stations in Alaska, Cuba, Puerto Rico, and 16 foreign lands. In 1939 its churches in the United States and abroad were organized into 42 synods and 276 presbyteries.

The 151st annual General Assembly was held in Cleveland, Ohio, May 25-31, 1939. Ruling Elder Sam Higginbottom, Philan.D., LL.D., president of Allahabad Christian College in India, was elected Moderator, and the Rev. Dr. Jesse Halsey of Cincinnati, Ohio, was appointed Vice-Moderator. The Assembly approved reports from its Department of Church Co-operation and Union regarding current negotiations with the Protestant Episcopal Church and with the Presbyterian Church in the United States (Southern) looking toward organic union; invited the Reformed Church in America and the United Presbyterian Church of North America to send representatives to confer with its Department of Co-operation and Union on the possibility of organic union; appealed to Congress to enact legislation forbidding the sale by Americans to Japan of munitions and raw materials for war until such time as Japan may cease to violate the Nine Power Treaty; expressed in definite terms the opinion of the Presbyterian Church on peace, race relations, child labor, rural life, civil liberties, and other current national and international problems; and called for a continuance of the "fundamental principles which have guided our nation for 150 years based upon the separation of Church and State."

The Church has its headquarters, including the offices of the General Assembly and the General Council, in the Witherspoon Building, Philadelphia, Pa., in charge of the Rev. William Barrow Pugh, D.D., LL.D., Stated Clerk. The Board of Christian Education and the Board of Pensions also are housed there, while the Board of Foreign Missions and the Board of National Missions are located in the Presbyterian Building, 156 Fifth Avenue, New York City.

Presbyterian Church in the United States (South). This division of the Presbyterian denomination covers the territory commonly known as the Southern States. It was composed in 1939 of 17 Synods and 88 Presbyteries.

Foreign mission work is carried on in six countries: Africa, Brazil, China, Japan, Korea, and Mexico, among 36,000,000 people.

The Seventy-Ninth General Assembly of the Church convened in Montreat, N. C., May 25, 1939, with 342 Commissioners present. Rev. Edward Mack, Ph.D., D.D., LL.D., was elected Moderator. The matter which is receiving the major thought and effort is completion of the \$3,000,000

Accrued Liability Fund in order to make possible the operation of the Pension Fund for Ministers. More than nine-tenths of this capital sum has been raised and a thorough church-wide campaign is in progress looking to consummation of this objective within the year. The meeting of the 1940 General Assembly will be held in First Presbyterian Church, Chattanooga, Tenn., on May 16th. Rev. E. C. Scott, D.D., is Stated Clerk and Treasurer, with office at 1240 Liberty Bank Bldg., Dallas, Texas.

United Presbyterian Church of North America. A member of the family of Presbyterian Churches, of Secession and Covenantan origin, formed by the Union in Pittsburgh, Pa., in 1858 of the Associate and Associate Reformed Churches.

The General Assembly of the church convened in Philadelphia, Pa., on May 24, 1939. The Assembly heard with joy, through the report of the Department of Evangelism, that the accessions by profession of faith were, with one exception, the largest in the last ten years. A "Tour of Evangelism," led by the Moderator of the Assembly, was conducted in practically every presbytery of the denomination. A feature of the Assembly's programme of great interest was the historical pageant and celebration out at the old Octoraro Church, a few miles out of Philadelphia, where in 1753 the first congregation of the Associate Church in America was organized. This was the old "Mother Church" of United Presbyterianism in America.

The Moderator of the General Assembly of 1939 was Judge H. Walton Mitchell of Pittsburgh, Pa. The Rev. O. H. Milligan, D.D., of Avalon, Pittsburgh, Pa., is Stated Clerk. Headquarters of the Board of Administration are at 705 Publication Building, Pittsburgh, Pa.

Cumberland Presbyterian Church. One of the Presbyterian bodies whose chief strength is in the Southern States. It was formed in 1810 when the so-called anti-revival party of the Presbyterian Church in the United States of America objected to the admission into the ministry of men who were not up to the usual literary and theological standards, and to the doctrine of fatality as taught in the third and tenth chapters of the Westminster Confession of Faith.

A general assembly which meets annually is the supreme judiciary; the 1940 meeting will be held in Cookeville, Tenn., June 13-18. Rev. E. R. Ramer, Milan, Tenn., was moderator of the general assembly in 1939 and the Rev. D. W. Fooks, of Nashville, Tenn., was stated clerk, treasurer, and general secretary.

PRESS PHOTOGRAPHY. See PHOTOGRAPHY.

PRICES, WHOLESALE AND RETAIL. See AGRICULTURE; BUSINESS REVIEW; LIVING COSTS AND STANDARDS.

PRINCE EDWARD ISLAND. A maritime province of Canada. Area, 2184 square miles; population (1939 estimate), 95,000 compared with 88,038 (1931 census). During 1938 there were 1971 births (21.0 per 1000); 1029 deaths (10.9 per 1000); and 591 marriages (6.3 per 1000). Chief towns and their 1931 populations: Charlottetown, the capital, 12,361; Summerside, 3759; Souris, 1063. In 1937 there were 19,520 students enrolled in the schools and colleges. There are two colleges—the Prince of Wales College (the head of the provincial school system) and St. Dunstan's.

Production. The gross value of agricultural production for 1938 amounted to \$13,376,000 of which field crops represented \$8,018,000. Fur farming is an important industry and for the year ending June 30, 1937, there were produced a total of 75,178 pelts (almost all silver fox) valued at \$2,182,723. Livestock (1939): 28,960 horses; 99,600 cattle, including milch cows; 46,300 sheep; 48,100 swine. In 1938 the fishing industry had 3310 men employed; the value of the fish caught totaled \$930,800, of which lobsters accounted for \$606,100. Forest production (1937) equaled 12,882 M cu. ft. valued at \$548,074. In 1937, from 240 manufacturing plants, employing a total of 1062 employees, the net value of products was \$1,117,298.

Government. For the year 1937, ordinary revenue totaled \$1,886,702; ordinary expenditure, \$1,943,634. The executive head of the government is the lieutenant-governor who is advised by an executive council of 9 members who are also members of the legislative assembly of 30 members elected for 5 years (15 are elected by real property holders and 15 by universal male and female suffrage). In the Dominion parliament at Ottawa, the province is represented by 4 Senators (appointed for life) and 4 members in the House of Commons. Lieutenant-Governor, George D. DeBlois (appointed Dec. 28, 1933); Premier, Thane A. Campbell (Liberal). See CANADA.

PRINCETON UNIVERSITY. A nonsectarian institution of higher learning for men at Princeton, N. J., founded in 1746. The total enrollment in the autumn of 1939 was 2714, of whom 2415 were undergraduates and 299 were advanced students. Of the undergraduates, 2033 were candidates for the degree of Bachelor of Arts and 382 for the degree of Bachelor of Science in Engineering. Of the advanced students, 269 were in liberal arts and sciences and 30 in the Schools of Architecture and Engineering. The faculty numbered 403. The total of endowment and other non-expendable funds in June, 1939, was \$31,532,296; the total operating income \$3,111,710; and the total operating expenditures \$3,021,338. Gifts and bequests for the year ended June, 1939, totaled \$1,581,625, with \$1,019,037 for endowment, \$160,448 for other funds, \$307,499 for current expenses, \$21,823 for student aid, \$12,702 for buildings, and \$60,115 unallocated. The library contained 940,000 volumes. President, Harold Willis Dodds, Ph.D., LL.D., Litt.D.

PRINCIPE. See SÃO THOMÉ AND PRINCIPE.

PRINTS. According to official report, approximately 92,000 prints in various media were produced by American print-makers working on the WPA Federal Art Project in 1939. Some idea of the variety as well as of the quality of this enormous output was obtained from the black and white section of the Exhibition of Contemporary Art at the New York World's Fair, which included in its catalogue 407 prints—etchings, lithographs, wood-cuts, etc.—selected from a vastly larger number submitted by graphic artists in all parts of the country.

From the fund bequeathed by Joseph Pennell, the Division of Fine Arts of the Library of Congress was enabled to make some notable additions to both its Whistler and Pennell print collections and also to acquire quite a number of excellent prints by contemporary artists both native and foreign. In the Library of Congress at Washington, a distinguished group of etchings by the greatest masters of all time, assembled by Mr.

and Mrs. Robert Woods Bliss, and comprehended in the "Dumbarton Oaks Collection," was shown during the latter half of the year.

On the schedule of practically all the Art Museums were notable exhibitions of prints illustrating either the genius of some one man or the accomplishment of a period—as, for example, the exhibition of engravings by Nanteuil held by the Philadelphia Museum, and that of "Five Hundred Years of Print Making" set forth by the Art Institute of Chicago. At greater distance was an exhibition of etchings and dry points by Rembrandt from the Rosenwald Collection held in the Art Museum of Honolulu.

A complete collection of etchings and dry points by Cadwallader Washburn representing his entire output from 1903 to the present day—about 274 plates—was presented in 1939 to the Art Department of the New York Public Library by an anonymous donor. Also Wesleyan University, Middletown, Conn., received a collection of approximately 300 prints from John Taylor Arms covering his production to date. During the scholastic year 1938-39 Mr. Arms was visiting lecturer on art at this university.

An American National Committee of Engraving was founded in the autumn of 1939 with the purpose of promoting and directing international exchanges in the graphic arts. John Taylor Arms, president of the Society of American Etchers, who has had exceptional experience organizing exhibitions at home and abroad, was elected president, with Ernest D. Roth, vice-president and secretary. Artists of high standing make up the executive committee, while laymen known for their interest in and advocacy of the graphic arts compose an auxiliary committee.

Prints were published and distributed in 1939 by the several Print Societies to their lay members, as follows—*The American College Society of Print Collectors*, "Evening in a Hot Spring" by Hiroshi Yoshida; "Island Watchers" by Armin Hansen, and "Manhattan—1930" by James McBey; *The Society of American Etchers*, "Market Day, Senlis" by Samuel Chamberlain; *The California Print Makers*, "Winter Chores" by H. W. Woiceske; *The Collectors of American Art*, "Cedars" by Alfred Hutty; *The Wood Cut Society*, "The Forest Pool" by John Buchland Wright, and *The Friends of Contemporary Prints*, an etching of the King Hooper House, Marblehead, by Samuel Chamberlain.

Members of the C.I.O. attempted to exclude from a Print Exhibition held in the Brooklyn Museum in the summer of 1939, works by all who were not members of the United American Print Makers, a C.I.O. affiliate, but were unsuccessful.

Carl Zigrosser, author of *Fine Prints Old and New and Six Centuries of Fine Prints*, was given a Guggenheim fellowship in 1939 to enable him to prepare a book on contemporary graphic arts in America.

The outstanding publication in this field in 1939 was *A Treasury of American Prints* by Thomas Craven. Works by forty American print-makers were included in *Fine Prints of the Year 1938*, published in England early in 1939. Unfortunately on account of the war this valuable publication has been temporarily suspended.

Loss by death in this field included C. A. Seward of Wichita, Kan., Ellsworth Woodward of New Orleans and his brother William Woodward of Biloxi, Mississippi, and George Elbert Burr of Phoenix, Ariz. The last was best known for

his etchings of the desert, and had for some years before his death a standing order from the British Museum for a print from every plate he produced.

LEILA MECHLIN.

PRISON ASSOCIATION, AMERICAN. A conferential body organized in 1870 and incorporated in 1871 under the laws of the State of New York. The objects of the association are as follows: 1. Improvement of the laws in relation to public offenses and offenders, and the modes of procedure by which such laws are enforced. 2. Study of the causes of crime, the nature of offenders and their social surroundings, the best methods of dealing with offenders and of preventing crime. 3. Improvement of the penal, correctional, and reformatory institutions throughout the country, and of the government, management, and discipline thereof, including the appointment of boards of trustees and other officers. 4. The care of, and providing suitable and remunerative employment for, paroled and discharged prisoners and probationers, and especially such as may or shall have given evidence of reformation.

The association, the duly qualified medium for the registration of the opinions of prison administrators in the United States, holds an Annual Congress in some city on this continent, attended usually by representatives of more than 40 States of the Union. Printed *Proceedings* of the meeting are available. General Secretary, E. R. Cass, 135 East 15th St., New York City.

PRISONS, PAROLE, AND CRIME CONTROL. America's prison population has continued to grow until it reached an all-time high during 1939. Summary statistics for the institutions reporting to the Bureau of the Census are:

	1929	1932	1935	1938
Prison population on Dec. 31	119,429	135,597	141,216	151,929
State Institutions	106,465	123,315	126,439	134,846
Federal Institutions	12,964	12,282	14,777	17,083
Percentage previously imprisoned among male prisoners received during the year	38.1	41.8	50.4	49.0
State Institutions	37.1	43.4	51.4	48.2
Federal Institutions	42.4	42.3	46.4	51.7
Median age of male prisoners received during the year	26.8	26.9	27.6	27.7
State Institutions	25.9	26.0	26.6	26.7
Federal Institutions	31.3	31.7	32.2	31.8

The foregoing statistics of prison population do not include data for Alabama, Delaware, District of Columbia, Georgia, Idaho, Mississippi, and South Carolina as these jurisdictions did not report to the Census Bureau during all of the years covered. If the prison population of these states and the District of Columbia is added to the foregoing and the figures corrected to Dec. 31, 1939, the total number of prisoners in custody at the end of the year 1939 closely approximates 180,000. This is an increase of about 38.5 per cent during the past ten years. While there has been no significant change in the median age of those committed to prison during the past decade, the proportion of those received in prison who are known to have served previous sentences seems to be measurably increasing. The foregoing figures also show that for the country as a whole 49 per cent of those who entered State and Federal prisons in 1938 had previously served a prison sentence. In some states (Pennsylvania and Mas-

sachusetts among others) the percentage of those received in state prisons who had previously served a sentence reached as high as 67 per cent. In New York, 80 per cent of the men sentenced to prison by the courts had prior records, although not all of them had been previously committed. These figures on recidivism are of tremendous importance when appraising the value of our existing punitive system and when considering the necessity of revising present correctional methods.

The steadily mounting prison population has forced the construction of some new cells in a few states, but the serious overcrowding which exists in most prisons continues to thwart and frustrate all efforts to provide modern means of rehabilitating those committed to penal and correctional institutions. New York, Pennsylvania, Kentucky, Missouri, Georgia, and the Federal Government have recognized the imperative necessity for providing additional prison facilities and either began the construction of new prisons during 1939 or opened new correctional institutions previously authorized.

Even this relatively small addition to the country's prison capacity (estimated at 15,000) could not have been undertaken had funds from the Public Works Administration not been available. All told, the President approved the allotment of about fifty million dollars for new jails, prisons, and reformatories from the PWA appropriation of \$965,000,000 made available by Congress in June, 1938. Much of the new construction followed traditional lines and for that reason seemed to many to be needlessly expensive. It costs from \$5000 to \$6000 per cell to build an institution of the bastille type having high walls, tool-proof steel cells, and elaborate locking devices. Many penologists contend it ought to be possible to secure adequate facilities for about \$3000 a cell if reliance is placed upon qualified personnel and careful classification of the prisoners rather than upon cement and steel. This theory has been shown to be entirely practicable in several jurisdictions.

While the Federal System, New York, New Jersey, and a few other jurisdictions have made important strides in raising personnel standards, politics have continued to prevent the orderly development of a career service for prison officers and administrators. A survey made of those states where political control shifted during the past two years showed that in all but two instances the wardens of the state penitentiary were also changed and much of the guard personnel was replaced as well. The impact upon the penal system and the impartial administration of punishment by such rapid turnover of personnel needs no elaboration.

Moreover, the failure of budgetary authorities to provide adequate funds for the operation and maintenance of penal institutions has also handicapped every effort to provide practical means of rehabilitating and reforming the offender. For the country as a whole only about \$400 a year was available last year to house, clothe, feed, transport, and guard a prisoner. By the time the cost of bare necessities and the cost of a minimum force of guards is deducted from this figure little is left to provide the scientific and technical personnel so essential to the study of the individual prisoner and to his retraining and rehabilitation. Last year New York and Pennsylvania curtailed the funds for prison personnel to such an extent that prison psychiatrists and classification workers had to be dismissed.

It has been reliably estimated that 100,000 of the 180,000 men and women serving sentences in State and Federal institutions do not now come under any intelligent, constructive rehabilitative and reformatory influence whatsoever during the entire period of their sentence. Constructive employment of prisoners, for instance, has declined to the point where many state institutions are now merely vast idle houses with hordes of prisoners aimlessly milling about overcrowded prison yards. Except for a few of the better reformatories for young first offenders, vocational and academic training is given little attention or is simply superficially imposed upon a system of mass treatment.

Parole. The picture, however, is not so dark with respect to parole. The publication in April of the Attorney General's Survey of Release Procedures and the convening of a National Parole Conference made far-reaching contributions to the many perplexing questions involved in the release of prisoners. The survey consists of five volumes dealing with probation, parole, pardon, prison administration, and laws on release procedures. The National Parole Conference was called to meet in Washington last spring by Attorney General Frank Murphy at the request of President Roosevelt. More than 800 delegates attended the Conference and adopted a number of measures looking to improvement of the parole system. For the first time a declaration of the fundamental principles of parole was adopted and a beginning made at their effectuation. The Conference felt that it was of fundamental importance that practical measures be taken to divorce parole completely from politics and that more funds be made available for the supervision of persons released on parole. Massachusetts, California, Missouri, and Illinois have overhauled or are now overhauling their parole procedures, and several other states are studying the problem with new vigor.

The Federal Prison System. During the past year approximately \$14,000,000 was made available to the Federal Bureau of Prisons through the Public Works Administration for the construction and repair of Federal penal and correctional institutions. This money has been allocated and distributed among nineteen projects, which include the construction of a medium-security penitentiary located in Indiana, institutions for short-term Federal prisoners which are to be located in Colorado, Connecticut, Kentucky, and Texas, and funds for additional hospital, receiving, and housing facilities at a number of the existing institutions. The Federal prison camp system is also being expanded and its facilities improved. Also, a new institution for women, located at Dallas, Texas, is nearing completion.

The Federal prison population is today the highest it has ever reached. On June 23, 1939, it reached an all-time high of 18,862. This represented an increase of 56.2 per cent over the same date five years ago. Because of the lag in Federal prison construction in the last several years, overcrowding in existing institutions had made necessary the use of unsatisfactory basements and warehouses for housing purposes.

The Federal prison system has also inaugurated during the past year a complete personnel plan based on five essential elements:

1. It establishes a pay scale for all prison personnel which provides a minimum base pay with regular increases by fixed increments for continued satisfactory work. The base pay for a Junior Custodial Officer is \$1860 a year.

2. It calls for the recruiting of officers, through Civil Service, on the basis of carefully standardized physical, mental, and educational qualifications supplemented by character investigations.

3. It establishes ranks within the custodial service, so that men may look forward to promotion as well as pay increases.

4. It provides an in-service training programme for all ranks which includes physical education, defensive techniques, the care and use of weapons, supervised duty, and the completion of a study course compiled by the Bureau staff and covering all phases of penal administration.

5. It embraces a retirement system and pension programme, one feature of which is an annual physical examination with retirement for those found medically unfit for duty as well as automatic retirement based on age and years of service.

Federal Prison Industries, Inc. By the terms of an Executive Order of the President the Prison Industries Corporation had its status changed from that of an independent corporation to a branch of the Department of Justice. Its Board of Directors, however, was retained and the Corporation continues to supervise and control employment activities of all Federal prisoners. Approximately 30 per cent of the men and women in United States prisons are engaged in the manufacture of articles which are transferred to other Federal departments and agencies. No goods made in Federal prisons are sold in the open market in competition with private industry and free labor. Moreover, the Board of Directors which consists of representatives of industry, labor, agriculture, consumers, and the Attorney General have felt that in view of the unemployment situation new industries should be added only where absolutely necessary to prevent complete idleness. Emphasis has been placed upon utilizing the labor of prisoners on low priority, road, and other projects in National Forests and on other Government reservations. Mr. Emil Schram, Chairman of the Reconstruction Finance Corporation, was appointed to the Board of Directors during the past year, and Hon. John D. Miller resigned. The other members are Mr. Sam A. Lewisohn, Mr. Thomas A. Rickert, Dr. M. L. Brittain, and Mr. Sanford Bates.

International Penal and Penitentiary Congress. The meeting of the Committee to approve finally the programme for the International Prison Congress scheduled to be held in Rome during 1940 was cancelled. No final decision has yet been made as to whether the Congress will be convened as planned. Mr. Sanford Bates remains as Commissioner on the part of the United States to the Congress.

Crime Control. The constantly mounting cost of law enforcement and the steady increase in the number of prisoners as indicated above has focused attention upon methods of crime control and the prevention of delinquency. It has, however, been extremely difficult to co-ordinate the many local units engaged in some phase of crime control. A number of these, like the Sheriff and the County Jail, have resisted all efforts at modernization. To be sure, some progress has been made in the establishment of state police systems, public safety departments, and behavior clinics, but in the main crime prevention is still being discussed only in vague and general terms referring to the home, the school, and the community. Little money is being spent on practical programmes to demonstrate the possibilities of preventing delinquency in the areas where it is known to occur most frequently. The "Community Coordinating Councils" of Los Angeles, the "Area Projects"

in Chicago, and the Bureau of Special Service of the Jersey City Board of Education are illustrations of the efforts being made by a few communities to find practical means of preventing delinquency. The U.S. Children's Bureau has also established a project in St. Paul to demonstrate the techniques and methods which can profitably be followed by forward-looking communities in preventing crime.

It is significant to note, however, that principal reliance is still placed upon controlling crime by punitive methods. The average sentence, for instance, now being imposed by the courts upon various types of offenders as well as the average term actually served in prison has increased appreciably during recent years. Because punishment alone as a method of controlling crime has seemed to many to be, in large measure, futile, more funds (public and private), more experimentation, and further co-operation among all agencies has continued to be urged during the past year by a number of organizations as the only method of securing the amount of social protection the public has a right to expect.

JAMES V. BENNETT.

PRITCHETT, HENRY SMITH. An American astronomer and educator, died in Santa Barbara, Calif., Aug. 28, 1939. He was born in Fayette Co., Mo., Apr. 16, 1857, and was graduated from Pritchett College (A.B., 1875), at Glasgow, Mo., which was founded by his father. Subsequently he studied abroad and received his doctorate degree at Munich in 1894. Upon graduation he studied at the U.S. Naval Observatory under Asaph Hall and in 1878 he became assistant astronomer there. He returned to Glasgow in 1880 to become astronomer at the Morrison Observatory. In 1882 he was astronomer for the Transit of Venus Expedition in New Zealand. Upon his return he was appointed professor of astronomy and director of the observatory at Washington University, St. Louis. Appointed superintendent of the U.S. Coast and Geodetic Survey in 1897, he reorganized the Bureau, applying the Civil Service law, and after the Spanish-American War had the harbors of Puerto Rico surveyed. His success in this position led to his appointment as president of Massachusetts Institute of Technology in 1900.

Six years later he was invited to head the newly formed Carnegie Foundation for the Advancement of Teaching (q.v.). He was instrumental in having the college pension systems placed on a strong actuarial basis and organized investigations of various phases of educational life. One of the first and most important of these investigations was that made by Dr. Abraham Flexner in connection with the medical schools in the United States and Canada. In 1929, *Bulletin* 23, condemning the emphasis laid on college sports, and with an introduction by Dr. Pritchett, caused bitter controversy. He was retired as president emeritus of the Foundation in 1930, and shortly after published *Social Philosophy of Pensions*.

The holder of many honorary degrees, Dr. Pritchett was a member of the advisory council of the National Broadcasting Co., and a trustee of the Carnegie Institution of Washington and of the Carnegie Endowment for International Peace.

PROGRESSIVE EDUCATION ASSOCIATION. An organization formed in 1918 "to pioneer on the frontiers of human development"

in the field of education. It functions through the publication of *Progressive Education* and *Frontiers of Democracy*, books and special reports; through the work of national research committees; by organizing national and regional conferences, special meetings, summer workshops, radio talks; and by organizing and assisting study groups. During 1939-40 the Association's budget was \$50,785, for expenditures, obtained from the sale of publications and services; and \$200,000 for research and experimentation, obtained largely through foundation grants. The officers were: Honorary president, John Dewey, Columbia University; president, Carleton Washburne, Winnetka Public Schools, Winnetka, Ill.; treasurer, Mrs. Frances M. Foster, Lincoln School, Teachers College, New York; executive secretary, Frederick L. Redefer. Headquarters: 221 W. 57th St., New York City. See EDUCATION.

PROPORTIONAL REPRESENTATION. See MUNICIPAL GOVERNMENT; NEW YORK CITY, under Elections; OHIO.

PROTEINS. See BIOLOGICAL CHEMISTRY.

PROTESTANT EPISCOPAL CHURCH.

The concurrent observance in 1939 of the 150th anniversaries of the adoption of the Constitution of the United States and of the Book of Common Prayer was another reminder of the common debt which Church and State owed to those Churchmen-Statesmen who, a century and a half ago, played a leading part in starting both the Nation and the Episcopal Church on the road which they have traversed in succeeding years. The Presiding Bishop, the Rt. Rev. Henry St. George Tucker, designated October 15, as the date for the celebration and urged the use in churches on that day of a semi-liturgical office especially prepared by the Rev. Phillips E. Osgood, Chairman of the Church's Commission on Religious Drama. Since the Prayer Book was adopted in 1789, it has undergone thorough revision on at least two occasions, the last being completed by the General Convention of 1928.

Another notable anniversary observed in 1939, also in October, was the semi-centennial of the beginning of the United Thank Offering of the Women of the Church. Since its initiation women in ever increasing numbers have shown their thankfulness for "the blessings of this life" by gifts which have totaled more than seven million dollars. These gifts are used to provide buildings and equipment in the mission field both at home and abroad, to train, send, and support women missionaries and to care for them after their retirement.

When the House of Bishops met in its annual session, November 8-9 in Christ Church Cathedral, St. Louis, Mo., many changes were noted. Five Bishops had died and six Bishops resigned during the year. Eight Bishops were consecrated in 1939 and two Bishops-elect were awaiting consecration in 1940. The new Bishops were: the Rt. Rev. Richard A. Kirchhoffer (Indianapolis), the Rt. Rev. A. R. McKinstry (Delaware), the Rt. Rev. A. H. Blankingship (Cuba), the Rt. Rev. Spence Burton (Suffragan, Haiti), the Rt. Rev. John James Gravatt (Upper South Carolina), the Rt. Rev. William McClelland (Easton), the Rt. Rev. Henry H. Daniels (Coadjutor, Montana), and the Rt. Rev. Edwin J. Randall (Suffragan, Chicago).

The House of Bishops at this meeting acceded to the request of the Bishop of Southern Brazil, the Rt. Rev. William M. M. Thomas, for a Suf-

fragan and elected to that post a young Brazilian priest, the Rev. Athalicio T. Pithan, rector of the Church of the Crucified in Bagé, an important centre close to the Uruguay border. Beyond his parish, Mr. Pithan took an active interest in the Brotherhood of St. Andrew work with prisoners and the underprivileged, and has an influential part in the Annual Council and on the Council of Advice of the diocese. It is expected that he will be consecrated early in 1940 in Porto Alegre, Brazil, on the occasion of the fiftieth anniversary there of the first Episcopal service by the pioneer missionaries, Lucien Lee Kinsolving and James W. Morris.

The House, greatly concerned over world conditions issued a significant Pastoral Letter under the title, "In Days of War." The salient points of this Letter were:

1. This is a day in which Christians can demonstrate to the world the vitality of their profession.
2. God has willed men to be free. There can be no morality without freedom; no responsibility without freedom.
3. War as an instrument of national policy is a denial of God.
4. Remember that we are Christians, invaded and controlled by the divine Person and Life and Spirit of Jesus Christ.
5. The only sure foundations of peace are mutual understanding, sympathy, fairness, generosity, good will between nations.
6. The teachings of Jesus are not mere counsels of perfection but sound, sober, practical common sense.
7. Many Christians do not apply His teachings to their own lives, their own business, their own social and economic and political thinking and planning, but abandon Him at the Church door.
8. The one international, interracial fellowship in a divided world today is the Christian Church.
9. It is easier to shoot straight than to think straight and to live straight. It is easier to combat a physical enemy without than a spiritual enemy within.
10. Let us do everything in our power to succor the suffering victims of man's inhumanity to man and bring to all men everywhere the compassionate ministries of Jesus Christ.

The headquarters of the National Council which is the Board of Directors of the Domestic and Foreign Missionary Society are in the Church Missions House, 281 Fourth Avenue, New York. The President of the National Council is the Presiding Bishop, the Rt. Rev. Henry St. George Tucker, Bishop of Virginia. For statistics, see RELIGIOUS ORGANIZATIONS.

PROTOZOA. See ZOOLOGY.

PRUSSIA. See GERMANY.

PSYCHIATRY. See PSYCHOLOGY.

PSYCHICAL RESEARCH. See PARAPSYCHOLOGY

PSYCHOLOGY. Increasing interest in conduct and motivation is reflected in *Introduction to Psychology* edited by E. G. Boring, H. S. Langfeld, and H. P. Weld with the collaboration of 17 eminent psychologists (New York: Wiley), in *Time Budgets of Human Behavior* (Cambridge, Mass.: Harvard Univ. Press), P. A. Sorokin and C. Q. Berger report a study of the way 103 unemployed and relief workers spend their time. Their data definitely contradict hedonistic theories of human motivation. J. Dewey's "Theory of Valuation" (*Int. Encycl. Unified Sci.*) defines

values as attitudes attaching to means which are expected to mediate desired ends, both being modifiable in the course of experience. *Principles of Conditioning in Human Goal Behavior* by A. J. Mitrano (Columbus, O.: American Psychological Assn.) is an experimental study. *Frustration and Aggression* (New Haven: Yale Univ. Press), by J. Dollard, L. W. Doob, N. E. Miller, O. H. Mowrer, R. R. Sears, C. S. Ford, C. I. Hovland, and R. T. Sollenberger, defines aggression as an act directed toward the injury of an organism or organism surrogate, and contends that it is always a consequence of frustration, and that frustration always leads to some form of aggression. J. F. Brown has studied the reactions of 150 unselected psychiatric patients and 20 controls in a frustrating situation. "The exercise of authority benevolently . . . to avoid creation of resentment, hostility, and destruction becomes the central problem of human life," according to L. K. Frank. He finds the dilemma of leadership in the fact that a domineering leader motivated by hostilities can always gather a following who find release from their own repressed hostilities by obeying the leader's destructive demands, whereas the rare creative individuals who offer valuable discoveries and improved methods usually meet only opposition from dominant personalities who have pushed their way to power. He suggests the need for sweeping changes in the traditional methods of educating potential leaders. Harsh early discipline, he thinks, is responsible for the repressed hostilities that motivate criminals, rebels, tyrants, and war breeders alike. Even the irrational acquisitiveness of persons who amass fortunes beyond their needs he thinks is caused by some childhood deprivation, such as early or sudden weaning.

Child Psychology and Educational Psychology. J. Levy describes an experiment in training nurses to help mothers in preventive mental hygiene. *Parent Education* by E. A. Davis (Univ. Minn. Child Welf. Monogr. Ser., 1939, No. 7) presents evidence that trained leaders can succeed in imparting many established principles of child psychology. *The Psychology of Parent-Child Relationships* by P. M. Symonds (New York: Appleton-Century) presents significant new data. *Biographies of Child Development* by A. Gesell, B. M. Castner, H. Thompson, and C. S. Amatruda (New York: Hoeber) presents brief summaries of the developmental progress of 84 atypical babies. *Time-Sampling Studies of Child Behavior* by R. E. Arrington (Columbus, Ohio: American Psychological Association) is also an observational study of children. New books on the nursery school period are *Nursery School Education* by J. C. Foster and M. L. Mattson (New York: Appleton-Century), *The Influence of Nursery School Experience on Children's Social Adjustments* by A. T. Jersild and M. D. Fite (Bur. Pub., Teach. Coll., Columbia Univ.), and *Practice in Preschool Education* by R. Updegraff, H. C. Dawe, E. E. Fales, B. C. Stormes, and M. G. Oliver (New York: McGraw-Hill). *The Sociology of Childhood* by F. J. Brown (New York: Prentice Hall), is a textbook for courses in educational sociology. F. J. O'Brien in his presidential address at the 16th annual meeting of the American Orthopsychiatric Association stressed the importance of teachers' personalities in influencing the lives of children. M. D. Nichols, J. Worthington, and H. Witmer find that unfavorable attention from

a teacher is detrimental to the development of kindergarten children and that a teacher's favorable attitude is helpful to most of them. H. H. Anderson has made a study of domination and social integration in children and teachers. In integrative behavior, as Anderson uses the term, "the individual responds voluntarily and without coercion to differences in other persons" and "finds a common purpose among differences." "Dominative behavior resists differences, resists change, resists growth." "In dominative behavior, a person disregards the desires of others, uses commands, threats, or force to gain his unyielding objectives, "attacks the status of others" and "adds to their insecurity." "Domination is the behavior of an insecure person." "Domination does not induce integrative behavior in a companion." Domination incites resistance, which is one form of dominative behavior. *The Secret of Childhood* by M. Montessori, translated by B. B. Carter (New York: Stokes) stresses the need of allowing normal development unimpeded by adult repression.

According to G. D. Stoddard, the new concept in educational planning is that the child should be its determiner. W. Reichenberg has shown by experiment that children do better work under the influence of a joyful emotion. G. P. Harnwell points out that "the real student is not taught, he learns." Dr. Harnwell emphasizes the role of curiosity in the learning process. Education should seek to minimize any situation which penalizes the display of natural curiosity on the part of the very young. R. Rallison learned from 1659 boys and 1855 girls that biology, chemistry, mechanics, and electricity dominate the interests of both sexes. B. B. Greenberg, Assistant Superintendent of Schools of New York City, is developing a socialized and vitalized program for gifted children. J. E. Anderson points out that every curriculum represents a compromise between the demands of society and those of the child's needs, interests, and abilities. B. Hansburg has made *An Experimental Study of the Effect of the Use of the Print Shop in the Improvement of Spelling, Reading, and Visual Perception* (Teach. Coll. Contrib. Educ., No. 776). *The Curriculum and the Child* by L. B. Stretch (Minneapolis: Educational Publishers) is written for superintendents and others who are constructing and revising curricula. *Education as Cause and as Symptom*, by F. L. Thorndike (New York: Macmillan), is a challenging book.

Factors that affect learning in both human and animal subjects continue to inspire laboratory research which may shed light on the problems of the educator. E. Poe, C. F. Poe, and K. F. Muenzinger have found that deficiency of vitamin B₂ in the diet of young rats has a deteriorating effect on their learning ability. R. C. Travis finds that excessively long practice periods are extremely deleterious in motor learning. The longer the practice period, the longer must be the rest period. C. L. Thiele's experiments indicate that the old-fashioned drill method is less effective for teaching new facts than the generalization method, which emphasizes the discovery and use of relationships.

"Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment," according to D. Wechsler in *The Measurement of Adult Intelligence* (Baltimore: Williams and Wilkins), which describes the new

Bellevue Scale, and offers new formulations of mental deficiency and mental deterioration. Wechsler opposes the current notion that mental deficiency is a unitary entity. He also insists that mental decline sets in at least by the age of thirty. In place of the traditional I. Q., he substitutes the quotient obtained by dividing the actual score by the average score for age. *Tests of Mental Development* by F. Kuhlmann (Philadelphia: Educ. Test Bur.) describes tests evaluated in 75,000 or more individual examinations. Among other new books are *The Factorial Analysis of Human Ability* by G. H. Thomson (Boston: Houghton Mifflin); *Testing in the Elementary School* by L. W. Webb and A. R. M. Shotwell (New York: Farrar & Rinehart); *A Dictionary of Terms Used in Measurements and Guidance* by E. B. South (New York: Psychological Corporation); *Measurement* by W. A. McCall (New York: Macmillan); and *Meeting the Needs of the Mentally Retarded* by L. K. Ade (Bull. Dep. Publ. Instruct. Pa. No. 420). The second revised edition of G. H. Hildreth's *Bibliography of Mental Tests and Rating Scales* (New York: Psychological Corporation) lists 4279 titles. The second edition of F. N. Freeman's *Mental Tests* (Boston: Houghton Mifflin) contends that "the group factors or primary abilities are probably not native abilities but habits of thought formed by experience and training. All abilities, both special and general, are affected by training," though some appear to have an underlying organic basis.

A. W. Brown, I. P. Bronstein, and R. Kraines report an increase in I. Q. in cretins treated with thyroid, the increase being greatest for those who began treatment early. D. Straker studied 5000 rural children in England and found that eight per cent had I. Q.'s below 85. Bad health and poor home conditions were significant causes of retardation in at least a third of the cases. T. M. Livesay at the University of Hawaii found evidence of increases in intelligence during the years at college. M. E. Smith has studied the problem of bilingualism in Hawaii. The late T. R. Garth (1872-1939), after a generation of fruitful psychological research, culminating in comparative studies of Indian children reared in white homes and their siblings reared in the Indian environment, seemed at the time of his death to be approaching the hypothesis that differences in mental ability between races are largely dependent on environment. J. Wells and G. Arthur have shown that children of feeble-minded parents tend to develop a higher I. Q. in foster home placement than their siblings brought up by their own parents. M. Skodak's studies of children in foster homes have added to the growing body of evidence that children gain in I. Q. with improved environment. E. A. Cowan and E. Stout report a comparative study of the adjustment made by foster children after complete and partial breaks in continuity of home environment. They found that partial breaks are less likely to be followed by behavior indicating insecurity. This finding is opposed to the policies of placement agencies that insist on a complete break. *Rehabilitation of Children* by M. H. Baylor and E. D. Monachesi (New York: Harper) is a study of child placement by social agencies.

For behavior problems, G. Arthur reports that tutoring proved to be a therapeutic measure for children whose behavior difficulties resulted from educational maladjustment. A. Bennett has found that in reading difficulties, the dominant problem

is often an emotional one, due to repeated failure in reading. J. H. Conn and others have been using a play therapy in which the child is treated as an equal and allowed to express himself freely. O. H. Mowrer and others report desirable results from the installation of self-government in a children's center.

Among new books are *Mental Hygiene in Education* by P. A. Witty, C. E. Skinner, and others (New York: Farrar and Rinehart); *The Clinical Treatment of the Problem Child* by C. R. Rogers (New York: Houghton Mifflin); *The Child and His Family* by C. Bühler and others (translated by H. Beaumont) (New York: Harper); *Educational Psychology* by C. H. Judd (Boston: Houghton Mifflin); *Differential Fore-cast of Achievements and their Use in Educational Counseling* by R. R. Wolfe (Columbus, Ohio: American Psychological Association); *Psychology Applied to Teaching and Learning* by C. R. Griffith (New York: Farrar and Rinehart); *Psychology of Individual Differences* by A. R. Gilliland and E. L. Clark (New York: Prentice-Hall); *Educational Psychology* by J. L. Mursell (New York: Norton); *Introductory Psychology for Students in Education* by E. S. Conklin and F. S. Freeman (New York: Holt); *The Failing Student* by K. L. Heaton and V. Weedon (Chicago Univ. Press); *Coming of Age: a Frank Study of the Problems of Adolescence* by E. M. Grant (New York: Revell); *Love Problems of Adolescence* by O. M. Butterfield (Teach. Coll. Contrib. Educ., No. 768); and *Psychology and Teaching of Secondary School Subjects* by H. B. Reed (New York: Prentice-Hall). H. Hartshorne is editor of *From School to College* (New Haven: Yale Univ. Press), a study of the transition experience of 1200 boys. *The Maturing Mind* by T. H. Pear (New York: Nelson) emphasizes adult learning.

Mental Health and Mental Disease. This year the psychological world mourns the loss of three of its most penetrating students of feeling and emotion, M. F. Washburn, H. Ellis (q.v.), and S. Freud (q.v.).

Mental Health, edited by F. R. Moulton and P. O. Komora, (Science Press) is the fourth symposium of the American Association for the Advancement of Science in the field of public health. *Mental Hygiene*, by W. H. Mikesell (New York: Prentice-Hall), treats everyday mental and emotional problems of the normal person.

C. L. Hull, seeking to further growing rapprochement between psychoanalysis and experimental psychology, has redefined several psychoanalytic concepts in his own behavioristic terms. *Explorations in Personality*, by H. A. Murray and 27 other psychologists of the Harvard Clinic, utilizes both experimental techniques and Freudian interpretations, with an imaginative, subjective outlook. Most interesting is the proposed Thematic Apperception Test, in which the person tested reveals his preoccupations. *Fulcrum of Conflict, a New Approach to Personality Measurement*, by D. Spencer (Yonkers: World Book), offers a pencil-paper test for disclosing conflicts between an individual's behavior and his ideals, his parents' ideals, or the behavior of his parents or his associates. J. P. Guilford and R. B. Guilford have begun an investigation seeking a physiological basis for certain personality traits by the factor-analysis method. W. E. Moore has studied personality traits and voice quality in college students. He finds that students with

breathy voices are likely to be high in neurotic tendencies and introversion and low in dominance and to rate themselves lower than disinterested critics, whereas students with harsh or metallic voices rate themselves higher than disinterested critics.

Popular books in the field of personality include *Improving Your Personality* by E. G. Lockhart (Chicago: Walton); *Personality and Character* by J. D. Messick (New York: Revell); *The Art of Being a Person* by G. R. Wells (New York: Appleton-Century); *Your Brain and its Story* by R. J. A. Berry (New York: Oxford Univ. Press); and *Mastering Your Nerves* by P. Fletcher (New York: Dutton).

The Logic of Modern Psychology, by C. C. Pratt (New York: Macmillan), seeks to excuse or justify the psychologist who invents his own physiological hypotheses in the absence of direct evidence. Meanwhile, experimental neurologists, psychologists, and clinicians are making many significant discoveries. In *The Starlike Pattern* (New York: Farrar & Rinehart), C. Landis and W. Hunt report an extensive experimental study. This year marks a decade of work in electroencephalography since the pioneer experiments of Berger in 1929, and an increasing number of investigators have applied this technique to a wide variety of problems. Among new books on the nervous system are *La Psychologie Organique des Systemes Nerveux* by Pierre Jean (The Organic Psychology of the Nervous Systems) (Paris: Editions Correa), and *Textbook of Neuro-anatomy and the Sense Organs* by O. Larsell (New York: Appleton-Century). A year book of neurology, psychiatry, and endocrinology is now published by the Yearbook Publishers, Chicago. *The Organism*, by K. Goldstein (New York: American Book), is a holistic approach to biology based on pathological data in man.

Outstanding among the new periodicals is *Psychosomatic Medicine*, sponsored by the Committee on Problems of Neurotic Behavior of the Division of Anthropology and Psychology of the National Research Council, and concerned with the psychological approach to general medicine, and the interrelation between emotional life and bodily processes, both normal and pathological. The first issue contains a symposium of six articles on hypertension (high blood pressure), suggesting that hypertension is largely confined to occidental civilizations, that arteriosclerosis is not the cause but the result, and that the pathological changes are preceded by an early phase of functional disturbances based on excessive and inhibited hostile impulses. O. D. Anderson, R. Parmenter, and H. S. Liddell have shown that sheep in which an experimental neurosis has been produced reveal a cardiac disorder with rapid, irregular pulse and extreme sensitivity of the heart's action to stimulation. *The Patient in the Unit of Practice*, by D. W. Propst (Springfield, Ill. and Baltimore, Md.: Charles C. Thomas), includes a discussion of psychotherapy in general medicine. In *One Hundred Thousand Days of Illness* (Ann Arbor: Edwards), D. Ketcham stresses medical and social needs of the child patient. *The Psychology of Common Sense*, by A. A. Roback (Cambridge, Mass.: Sci-Art), maintains the extraordinary thesis that sanity is relatively rare. *Studies of Abnormal Behavior in the Rat: the Neurotic Pattern and an Analysis of the Situation which Produces It*, by N. R. F.

Maier (New York: Harper), suggests some interesting parallels with human neuroses.

In *Hereditary and Environmental Factors in the Causation of Manic-Depressive Psychoses and Dementia Praecox* (Utica, N. Y.: State Hospitals Press), Pollock, Malsberg, and Fuller argue that the type of mental disease is dependent primarily on the organism, but *Mental Disorders in Urban Areas*, by R. E. L. Faris and H. W. Dunham (Chicago: Chicago Univ. Press), a study of 34,864 cases in four state hospitals and eight private sanitariums, reveals a close relationship between insanity and the ecological structure of the city. Catatonic schizophrenics were found to come mostly from slum areas where poverty and culture conflict are combined, paranoids and hebephrenics from rooming-house areas where individuals live in social isolation, and general paresis from areas where there is a disproportion between the sexes. In *New Ways in Psychoanalysis* (New York: Norton), K. Horney stresses the influence of competitive culture in causing neuroses. Competitive tendencies lead to isolation and fear, and increase the wish for dependence, but the latter hurts self-esteem and drives the individual back into competitiveness and self-assertion, making a vicious circle. *Social Forces in Personality Stunting*, by A. H. Khamat (Cambridge, Mass.: Sci-Art), also finds the cause of widespread psychological immaturity in the exploitive, autocratic, and competitive structure of society. G. Devereux contends that schizophrenia is rare among primitives, and probably results from an attempt to become adapted; but in *Sex, Custom, and Psychopathology, a Study of South African Pagan Natives* (New York: McBride), B. J. F. Laubscher reports that the psychoses of the tribesmen correspond closely to those found in Europe. G. L. Freeman suggests that certain personality maladjustments may depend on relationships between the tonic or postural segment of response and its phasic or kinetic aspect. If frustration is encountered, postural activity is heightened. If postural tensions exceed appropriate levels, higher responses become disorganized. A. Harrasser reports that athletic types most often show the catatonic form of schizophrenia.

An increasing number of psychiatrists report favorable results from shock therapy, and nitrogen is gaining favor in delicate cases where insulin and metrazol are contra-indicated. L. L. Bryan reports that in shock therapy the best results are obtained when occupational therapy and psychotherapy are used conjointly. *The Occupational Treatment of Mental Illness*, by J. I. Russell (Baltimore: William Wood), shows the value of occupational therapy in integrating and socializing the personality and restoring self-confidence. *Psychopathic States*, by D. K. Henderson (New York: Norton), stresses the importance of socializing the psychopath. A. Myerson favors altering the life of the patient in the direction of more sunshine, exercise, feeding, and entertainment. *The Language of the Dream*, by E. A. Cuthell (New York: Macmillan), advocates active use of dream analysis in therapy. J. L. Moreno employs a psychodramatic shock therapy. N. Reider, D. Olinger, and J. Lyle find amateur dramatics a therapeutic agent in the mental hospital far more important than just recreation. At Bellevue Hospital, F. J. Curran employs dramatic treatment for adolescent boys. The boys write and act their own plays. P.

Schilder finds that in severe neuroses group therapy has two advantages over individual therapy, (1) the associations of one patient will stir up associations in the others, and (2) patients accept hitherto unacceptable facts when they find the same experiences and attitudes in other patients.

The second edition of *A Textbook of Abnormal Psychology*, by R. M. Dorcus and G. W. Shaffer (Baltimore: Williams and Wilkins), includes a discussion of the new chemical therapies. *Elements of Abnormal Psychology*, by L. F. Kuntz (Notre Dame, Ind.: Notre Dame Bookstore), is a text for advanced college students, with emphasis on psychiatric treatment. *The Troubled Mind* by H. Roberts (New York: Dutton) includes chapters on the insanities by M. N. Jackson. *Outline of Psychiatric Case Study* by P. W. Preu (New York: Harper) is a useful guide for taking complete psychiatric histories. There is growing recognition of the importance of the nurse in the whole therapeutic process, and several recent books have been written to give nurses more psychological insight.

Social Psychology. Numerous investigators have attempted studies of social attitudes and prejudices and the possible techniques for modifying them. C. Bird has prepared a bibliography of suggestion and suggestibility, comprising 233 titles. L. L. Ramseyer has shown that statistically reliable shifts of attitude can be produced by the showing of documentary motion pictures. C. R. Miller, S. S. Sargent, and others have made significant contributions to the detection and analysis of propaganda. *Public Opinion*, by W. Albright (New York: McGraw-Hill), deals with the psychological techniques employed in creating public opinion. S. P. Hayes, Jr., has made a study of the consistency of voters' attitudes. H. Meltzer has studied attitudes of American children toward peaceful and warlike nations. M. Handman debunks current arguments in favor of war. *Civilization, War, and Death*, by the late S. Freud, edited by J. Rickman (London: Hogarth Press and Institute of Psychoanalysis), is made up of excerpts from longer works previously published. *Life: a Psychological Survey*, by S. L. Pressey, J. E. Janney, and R. G. Kuhlén (New York: Harper), begins with a discussion of the socio-economic and cultural environment of modern life.

E. S. Dexter, M. H. Krout, R. Stagner, and others have made comparative studies of radicals and conservatives. Their data are to be regarded not as attempts to evaluate radical theory but as an effort to learn the factors which sensitize some individuals to certain ideologies. E. Nelson has found that student attitudes seem to depend more upon father's vocation than upon classification in college. In *Race Against Man* (New York: Putnam), H. J. Seligman shows that behavior changes with social status, regardless of race. *After Freedom*, by H. Powdermaker (New York: Viking Press), is a study of negro-white relations in a town of the deep south. In *Migration and Environment* (New York: Oxford Univ. Press), H. L. Shapiro reports a study of Japanese immigrants to Hawaii, their relatives in Japan, and their children born and brought up in Hawaii. Astounding divergences were found. S. C. Dodd believes that societal behavior is determined by societal tensions, which arise when desire exceeds the quantity of what is desired. In *Superstition and Society* (London: Hogarth

Press), R. Money-Kyrle argues that superstitions have much in common with neurotic beliefs. Taboos are institutionalized obsessional protections against the satisfaction of repressed desires. Collaboration between psychoanalysis and social anthropology is needed. J. Ratner is the editor of *Intelligence in the Modern World* (New York: Modern Library), a representative selection from John Dewey's published and unpublished writings. The psychiatric approach to sociological problems is gaining favor.

The Journal of Criminal Psychopathology (Woodbourne, N. Y.: Woodbourne Institution for Defective Delinquents), edited by V. C. Branham, was begun last July. *Problems in Prison Psychiatry*, by J. G. Wilson (Caldwell, Idaho: Caxton), finds the value of imprisonment to be limited and contends that more would be gained by psychiatric attention to probationers. N. S. Hayner and E. Ash find that the prison community, made up of outcasts, devoted to obtaining goods and services denied by the administration, re-enforces those behavior tendencies which society strives to prevent. C. R. Shaw finds that delinquencies of boys appear to be purposive adjustments to the practises and norms of the group (gang) to which the individual belongs. M. A. Saffir points out that there are two major approaches in the prevention of delinquency: (1) the establishing and strengthening of the social impulses, and (2) the legitimate satisfaction of those impulses that conflict with the social impulses. After studying records from 18 countries of Europe, L. S. Penrose concludes that the more provisions are made for the insane and the defective, the fewer facilities are required in providing for criminals.

Crime and The Man, by E. A. Hooton (Cambridge, Mass.: Harvard Univ. Press), summarizes anthropometric, morphological, and sociological data from 13,873 convicts and 3203 nonconvicts from ten states. He finds that criminals are on the whole physically and mentally inferior to law-abiding citizens of the same ethnic origin. *Familial Feeble-mindedness* by C. H. Town (Buffalo: Foster & Stewart), a study of 141 families, points out that these families, selected because they are foci of feeble-mindedness, are also foci of disease, alcoholism, destitution, criminality, and vice.

N. Bell is editor of *The Offender in the Community*, the yearbook of the National Probation Association (New York: National Probation Association). M. Ihns finds that women criminals are of three types, the negativistic, the emotionally unstable, and the affected,—that is, those with a psychological need to appear more than they are. C. A. Wright's research has convinced him that treatment with endocrine preparations will often control delinquency and rehabilitate the patient.

Sex and Internal Secretions (2d ed.), edited by E. Allen, C. H. Danforth, and E. A. Doisy (Baltimore: Williams & Wilkins), includes a chapter on sex drive by C. P. Stone. Among other books are *Crime and Society: An Introduction to Criminology* by N. F. Cantor (New York: Holt); *Punishment and Social Structure* by G. Rusche and O. Kirchheimer (New York: Columbia Univ. Press); *The Psychological Treatment of Crime* by W. N. East and W. H. de B. Hubert (London: H. M. Stationery Office); and *Organization and Teaching of Social and Economic Studies in Correctional Institu-*

tions by G. M. Kendall (Bur. Pub., Teach. Coll., Columbia Univ.).

Psychotechnology. Extensive psychotechnical research in Italy has led to the construction of machines that have three or four speeds and rhythmical patterns, to lessen the strain of rhythm patterns enforced on the worker. Personnel for Swedish State Railways has been selected with the aid of psychological tests since 1934. In Germany, before the outbreak of war, it was reported that 40,000 candidates were being examined annually for such work as motor driving, signaling, wireless telegraphy, and aviation. In Budapest, promotion to a commissioned rank in the army is conditioned upon passing certain psychological tests. Other tests are required of army motor drivers. In America there have been numerous studies of the choice, enjoyment, and educational value of radio programs, and a whole issue of the *Journal of Applied Psychology* has been devoted to radio research. An increasing number of American psychologists report research on the prevention of automobile accidents. Tests and training of drivers and safety education of children have accomplished much. The need to educate elderly pedestrians is now being stressed. K. Münnich finds that 10 years' flight statistics in the United States show that human failure causes more than half the accidents in noncommercial and nonmilitary aviation, indicating the need of rigid selection to eliminate unfit pilots in advance. C. E. Ferree and G. Rand have designed an instrument to test pilot fitness for night driving. Among new books are *Psychology for Business and Industry* by H. Moore (New York: McGraw-Hill); *Mental Tests for Civil Service Examinations* by W. J. Barse (New York: Grosset); and *Counseling Young Workers* (New York: Vocational Service for Juniors) by J. P. Culbert and H. R. Smith. D. T. Dyer finds that the earlier in life vocational decisions are made and the more in line with boyhood occupations and hobby, the more stable they are. In Transylvania, Rumania, vocational guidance is now compulsory in the sense that no factory or small industrialist can receive apprentices without a psychotechnical certificate. The subjects are not compelled to choose only the jobs that have been advised but employers usually prefer to receive only the candidates recommended for their special jobs.

Books. *Human Development and Learning*, by F. S. Salisbury (New York: McGraw-Hill), introduces the beginning student to some of the new psychologies. *General Psychology*, by L. E. Cole (New York: McGraw-Hill), has a mechanistic bias. *Introduction to Methods in Experimental Psychology*, by M. A. Tinker and K. H. Baker (New York: Appleton-Century), stresses measurement of aptitudes and personality. *Lecture Demonstrations for General Psychology*, by N. V. Scheidemann (Chicago Univ. Press), utilizes no special apparatus or material other than that available to all teachers. *American Psychology before William James*, by J. W. Fay (New Brunswick, N. J.: Rutgers Univ. Press), covers the period from 1640–1890. *Emotions: their Psychological, Physiological, and Educative Implications*, by F. H. Lund (New York: Ronald Press), gives a comprehensive account of neural, glandular, and other physiological factors in emotions. *Thus We are Men*, by W. Langdon-Brown, is a collection of addresses by a distinguished physician (New York: Longmans, Green). *Let*

Me Think, by H. A. Overstreet (New York: Macmillan), is the first volume of a new series planned and edited by the American Association for Adult Education. *How to Think Straight*, by R. H. Thouless (New York: Simon & Schuster), is a popularly written book on psychology and applied logic. *The Psychology of Making Life Interesting*, by W. White (New York: Macmillan), stresses the value of variety. Among other new books are *Cognitive Psychology* by T. V. Moore (Philadelphia: Lippincott); *General Psychology* by J. P. Guilford (New York: Van Nostrand); *Principles of General Psychology* by E. Freeman (New York: Holt); *Psychology of Individual Differences* by A. L. Gilliland and E. L. Clark (New York: Prentice-Hall); *The Mechanism of Thought, Imagery, and Hallucination* by J. Rosett (New York: Columbia Univ. Press); *Taste and Temperament* by J. Evans (New York: Macmillan; London: Jonathan Cape); *Scientific Hypnotism* by R. B. Winn (Boston: Christopher); *How to Use Psychology in Everyday Living* by W. S. Casselberry (Burbank, Cal.: Ivan Deach.); and *Use Your Head* by B. Fürst (New York: Funk & Wagnalls).

MABEL F. MARTIN.

PSYCHOTECHNOLOGY. See PSYCHOLOGY.

PUBLIC AFFAIRS, INSTITUTE OF. An organization inaugurated in 1927 at the University of Virginia for the purpose of discussing problems of current political, social, and economic importance. Begun as a purely national forum it was enlarged in 1932, after the closing of the Institute of Politics at Williamstown, to include international problems as well.

The attendance at the 1939 session, which was held from July 3 to July 15, consisted of 1251 registered members and visitors, representing 29 states and 9 foreign countries. Membership in the Institute is open to men and women who have taken part in public life and to all those interested in the discussion of public affairs. While contributions are solicited, there is no set membership fee and all sessions are open to the public without charge.

The general topic of the 1939 session was "New Problems of Government: National and International." This topic was broken down into four sub-topics, each the subject of round table discussion as follows: "Foreign Affairs," Prof. Bruce C. Hopper of Harvard University, Leader; "National Affairs," Mr. Ernest K. Lindley of Washington, D. C., Leader; "The Position of the Individual in Rival Political Systems," Prof. Robert L. McElroy of Oxford, Leader; "The Relation of Religion to Government," Dr. Deane Edwards of New York, Leader. The programme included morning addresses, afternoon round table discussions, and evening addresses with some 70 authorities in the various fields participating. All addresses are preserved in mimeographed form and are available to the public at small cost.

The officers of administration in 1939 were: John Lloyd Newcomb, president of the University of Virginia; Hardy Cross Dillard, acting director of the Institute; and Marjorie McLachlan, secretary of the Institute. Headquarters are at the University of Virginia, Charlottesville, Virginia.

PUBLIC FINANCE. As a result of a growing Congressional revolt against the heavy government spending policies of recent years, as well

as the improvement in business conditions, a trend toward curtailing the size of Federal expenditures made its appearance during 1939. The Administration, before its plans were upset by Congress, proceeded early in the year to draft a new spending-lending program designed to implement the principles laid down in the annual message of the President early in January, 1939. It was proposed therein that Federal expenditures be stabilized around \$9,000,000,000 yearly, in order to sustain the level of national purchasing power, regardless of revenues, which would be determined by fluctuating national income. The President sent Congress a special message on June 22 calling for the blanket approval of a program of Federal financing of public works, slum clearance, railroad equipment rehabilitation, farm electrification, and foreign loans through the Export-Import Bank that would aggregate \$3,860,000,000. A storm of opposition from conservative Democrats and Republicans caused the complete defeat of this program in Congress, after which the Administration, recognizing the change in popular attitude toward mounting Federal expenditures, itself favored a curtailment of Government outlays.

In the latter months of the year, as well as in his annual budget message to Congress on Jan. 3, 1940, the President emphasized the need for reducing other Federal expenditures because of the sharp increase in armament outlays made necessary by the war in Europe. This message proposed not only a decline in total expenditures, including debt retirement, to \$8,424,000,000 for the fiscal year ended June 30, 1941, as compared with \$9,099,000,000 scheduled to be spent in the fiscal year ended June 30, 1940, but also proposed that the Treasury obtain \$700,000,000 in cash, to reduce its borrowings, through calling upon various Government corporations to redeem, out of surplus funds on hand or to be raised through their own bond issues, \$700,000,000 of their stocks held by the Treasury. At the same time, the President asked Congress to impose \$460,000,000 of additional taxation to finance added national defense outlays, which would reduce the excess of expenditures to \$1,716,000,000 for the 1940 fiscal year, most of which would be raised through direct sales of United States savings bonds to the public and sales of special issues of Treasury obligations to the social security funds. Under the budget as presented, therefore, virtually no special other financing by the Treasury to raise new money was made to appear needful.

Federal Revenues. The total receipts of the Federal government were \$5,668,000,000 in the year ended June 30, 1939, a decline of \$574,000,000 as compared with the preceding fiscal year. The decline in revenues resulted from the poorer business conditions of 1938 and the liberalization of the income tax laws of 1938 and 1939. Income tax collections declined by \$452,000,000 in the 1939 fiscal year, as compared with the year before. The Treasury did not determine what proportion of this contraction in receipts was due to the changes in the law, particularly the elimination of the undistributed profits tax and the modification of the capital gains and losses provision, but started inquiries into this question to furnish a basis for future legislative proposals. Corporate income tax collections in the year ended June 30, 1939, were \$963,000,000, a decline of \$182,000,000 from the year before, while individual income tax collections of \$937,000,000 were down \$252,000,000. Social security tax collections by the Federal

RECEIPTS FOR THE FISCAL YEAR 1939 AND ESTIMATED RECEIPTS FOR THE FISCAL YEARS 1940 AND 1941

	Estimated, 1941	Estimated, 1940	Actual, 1939
Internal revenue:			
Income tax	\$2,302,000,000	\$1,953,000,000	\$2,182,300,486.97
Miscellaneous internal revenue	2,482,210,000	2,356,195,000	2,231,983,302.37
Unjust enrichment tax	4,000,000	6,000,000	6,456,802.43
Federal Insurance Contributions Act Taxes	632,500,000	598,600,000	530,354,779.41
Federal Unemployment Tax Act Taxes	93,900,000	104,800,000	100,868,935.68
Taxes upon carriers and their employees	135,000,000	123,750,000	109,256,539.77
Railroad Unemployment Insurance Act	6,750,000	4,950,000	
Customs	273,000,000	283,000,000	318,837,311.27
Miscellaneous receipts	221,400,000	273,500,000	187,765,467.69
Total receipts	\$6,150,760,000	\$5,703,795,000	\$5,667,823,625.59
Deductions			
(1) Net appropriation for Federal old-age and survivors insurance trust fund representing an amount equal to taxes collected and deposited under the Federal Insurance Contributions Act, less reimbursement to general fund for administrative expenses	602,800,000		
(2) For purposes of comparison net transfers to old-age reserve account (trust fund)		537,355,000	503,000,000.00
Net receipts, general and special accounts	\$5,547,960,000	\$5,166,440,000	\$5,164,823,625.59

government of \$740,000,000 were down only \$14,000,000.

The chief sources of Treasury revenue for the 1939 fiscal year, with estimates for 1940 and 1941 as presented in the annual budget message to Congress, are shown above.

Federal Expenditures. Federal expenditures during the fiscal year ended June 30, 1939, totaled \$8,765,000,000, not to count \$503,000,000 shifted to old-age reserve; they ran \$1,577,000,000 over the preceding fiscal year. National defense outlays increased by \$76,000,000 to \$1,056,000,000, but a very sharp further increase in such expenditures was assured for the following fiscal year as the result of a number of supplementary appropriations passed by Congress. Public works expenditures aggregated \$1,111,000,000, a rise of \$231,000,000 over the 1938 fiscal year. Unemployment relief was responsible for expenditures of \$2,677,000,000, the bulk of which went for work relief, as compared to \$1,996,000,000 in the preceding year. A change was made in the form of the Federal accounts for 1941 through eliminating the appropriations for the Federal Old-Age and Survivors' Insurance Trust Fund as an expenditure, this item now being carried as a direct deduction from receipts, as shown in the table of receipts above.

Estimated expenditures for the fiscal year that began July 1, 1939, with estimates for the two following fiscal years, are shown on pp. 651-652.

Treasury Financing Policy. Despite its huge excess of expenditures, the Treasury did not find it necessary to resort to public financing for new money on a large scale during the fiscal year ended June 30, 1939. It sold \$461,000,000 of 2½ per cent Treasury bonds of 1952 and \$342,000,000 of 1½ per cent Treasury notes due in 1943 for cash on Sept. 15, 1938. On Dec. 15, 1938, it raised \$402,000,000 of new money through the sale of 2½ per cent bonds due in 1965 and \$328,000,000 by the sale of 1½ per cent notes due in 1943. The Treasury raised \$605,000,000 net during the fiscal year by the sale of baby bonds, while \$1,094,000,000 was secured through the issuance of special series of Treasury securities to the social security and other funds managed by the Treasury. The gross public debt on June 30, 1939, was \$40,439,000,000, an increase of \$3,274,000,000 for the fiscal year. This rapid increase in the debt brought up the question of raising the limit of \$45,000,000,000.

The status of the public debt during the fiscal year ending June 30, 1939, and the estimates of debt changes for the two following years con-

tained in the President's message of Jan. 3, 1940, were as follows:

GROWTH IN THE PUBLIC DEBT IN FISCAL YEARS ENDING JUNE 30, (000,000, OMITTED)

	Estimated 1941	Estimated 1940	Actual 1939
Public debt at beginning of year	\$43,222	\$40,439	\$37,164
Increase in public debt during year:			
To meet deficiency in revenues and receipts, general and special accounts	2,276	4,033	3,600
Less debt retirements included in deficit	100	100	58
New taxes	-460		
Increase in working balance (+) decrease (-) on general and special account		-1,150	-261
Total increase in public debt during year	1,716	2,783	3,280
Decrease in public debt during year due to retirement of national bank notes, chargeable to working balance—on trust account, etc.			5
Net increase in public debt during year	1,716	2,783	3,275
Public debt at end of year	44,938	43,222	40,439

The Treasury extended further during 1939 the policy of financing a number of its agencies through the sale to the public of obligations of their own. The Reconstruction Finance Corporation, the Commodity Credit Corporation, the U.S. Housing Authority, and the Home Owners' Loan Corporation issued their obligations for cash or for refunding purposes on several occasions through the year. The contingent liability of the Federal government on all guaranteed obligations amounted to \$5,469,000,000 on June 30, 1939, an increase of \$591,000,000 for the fiscal year. That the Treasury planned to rely even more largely upon the sale of guaranteed, rather than direct debt, obligations, because of the adverse political implications of the extremely rapid increase in the direct debt, was indicated by the fact that the 1941 budget provided for the repayment of \$700,000,000 by Government corporations to the Treasury through redemption of their stock issues held by the latter.

The Social Security Act amendments enacted in 1939, by retaining the 1 per cent payroll tax payable by employers and employees for another three years and liberalizing benefits, will greatly curtail the eventual size of the reserve fund. Instead of

EXPENDITURES FOR THE FISCAL YEAR 1939 (UNREVISED), AND ESTIMATED EXPENDITURES FOR THE FISCAL YEARS 1940 AND 1941

	Estimated, 1941	Estimated, 1940	Actual, 1939
1. General (including recovery and relief).			
Departmental:			
Legislative establishment	\$ 23,045,700	\$ 22,090,740	\$ 22,031,282.67
Judicial establishment	10,973,000	10,381,000	9,456,444.68
Executive proper	544,700	508,300	447,241.07
Bureau of the Budget, including Central Statistical Board	874,000	659,800	396,659.92
National Resources Planning Board	1,105,000	951,000	722,088.69
Office of Government Reports	1,050,000	853,000	804,887.51
State Department	21,670,000	24,201,754	19,285,316.91
Treasury Department	164,398,260	180,777,718	176,425,524.54
War Department (nonmilitary)	1,720,000	1,695,000	2,922,790.68
Department of Justice	39,455,300	44,996,300	38,336,222.40
Post Office Department			1,668,621.43*
Department of the Interior	89,731,200	130,118,800	136,370,100.45
Department of Agriculture	119,505,918	149,731,268	153,727,691.39
Department of Commerce	33,729,500	37,712,850	20,041,193.99
Department of Labor	32,888,100	29,586,001	24,091,212.38
United States Maritime Commission	149,486,000	99,499,000	43,567,188.81
Civil Aeronautics Authority	28,309,000	28,393,000	18,421,261.34
Independent officers and commissions	59,959,300	65,719,400	61,759,283.11
Unclassified			63,892.82*
			727,074,076.29
Adjustment for disbursing officers' checks outstanding			-4,708,752.23
Total departmental	778,444,978	827,874,931	722,365,324.06
Department of Agriculture			
Agricultural Adjustment Program			
Agricultural Adjustment Administration	1,500,000	2,003,200	69,838,580.48
Administration of Sugar Act of 1937	45,000,000	45,000,000	(*)
Agricultural Adjustment Administration (act Aug 24, 1935)	165,000,000	190,000,000	210,505,293.56
Agricultural contract adjustments	100,000	110,000	477,636.62
Soil Conservation and Domestic Allotment Act	475,000,000	475,000,000	477,942,480.42
Federal Crop Insurance Act			
Administrative expenses	5,000,000	5,000,000	3,320,839.82
Subscriptions to capital stock of Federal Crop Insurance Corporation		10,000,000	5,000,000.00
Parity payments	170,000,000	220,000,000	19,503,416.99
Unclassified			9,204.81
Commodity Credit Corporation			
Restoration of capital impairment		\$119,599,918	
Other			\$108,030.89
Farm Credit Administration			
Crop loans		10,000,000	575,098.24 *
Other	17,110,000	6,439,000	5,149,237.96
Federal Farm Mortgage Corporation, reduction in interest rate on mortgages		7,400,000	7,818,547.62
Federal land banks			
Capital stock			150,800.00
Subscriptions to paid-in surplus			11,590,935.22
Reduction in interest rates on mortgages		29,500,000	30,639,785.96
Farm Security Administration		156,124,900	183,622,851.11
Farm Tenant Act			
Loans	30,000,000	30,000,000	20,598,014.77
Other	4,000,000	11,300,000	6,036,283.73
Unclassified			96.75
Rural Electrification Administration			
Loans	20,000,000	35,000,000	35,618,042.59
Other	3,095,000	2,712,000	2,149,338.28
Forest roads and trails	9,480,000	12,511,600	13,968,587.44
Department of the Interior			
Reclamation projects	58,962,000	99,117,900	79,329,428.13
Post Office Department (deficiency)	56,972,832	38,116,424	41,237,262.79
Navy Department (national defense)	901,751,660	767,589,092	672,968,992.93
War Department			
Military (national defense)	737,693,500	676,898,996	489,545,592.12
River and harbor work and flood control	217,302,000	222,076,330	192,998,752.41
Panama Canal	14,560,000	18,650,000	9,801,887.72
Treasury Department			
Interest on the public debt	1,100,000,000	1,050,000,000	940,539,763.50
Refunds of taxes and duties			
Customs	14,000,000	16,000,000	16,678,803.38
Internal revenue	42,011,900	38,015,000	39,177,056.66
Processing tax on farm products	15,000,000	15,000,000	12,004,543.01
District of Columbia (United States share)	6,000,000	6,000,000	5,000,000.00
Federal Loan Agency			
Federal Housing Administration	2,000,000	8,500,000	9,140,867.44
Reconstruction Finance Corporation			
Disaster Loan Corporation stock	5,000,000	9,000,000	8,000,000.00
Other	1,340,000	1,350,000	1,120,001.48
Federal Security Agency			
Civilian Conservation Corps	225,000,000	285,000,000	290,385,528.11
National Youth Administration	83,000,000	95,000,000	78,102,755.96
Social Security Board			
Administrative expenses	26,521,000	24,200,000	23,011,640.22
Grants to States	388,350,000	334,900,000	307,552,023.45
Unclassified			10.61 *
Other	61,257,000	60,718,700	54,221,283.22
Federal Works Agency			
Public Buildings Administration			
Construction	59,040,000	70,405,300	51,420,869.41
Other	16,077,500	15,407,250	14,837,903.19
Public Roads Administration	181,800,000	196,589,800	190,996,565.98

EXPENDITURES FOR THE FISCAL YEAR 1939 (UNREVISED), AND ESTIMATED EXPENDITURES FOR THE FISCAL YEARS 1940 AND 1941—(Continued)

Public Works Administration:			
Grants (act June 21, 1938).....	75,000,000	250,000,000	265,026,998.22
Loans (act June 21, 1938).....	12,000,000	25,000,000	18,740,571.72
Administrative expenses.....	4,000,000	18,000,000	23,401,322.34
United States Housing Authority.....	15,000,000	5,204,700	8,629,331.59
Work Projects Administration.....		1,400,000,000	2,161,500,655.13
Other.....	248,000	98,000	.....
Railroad Retirement Board:			
Administrative expenses.....	2,590,000	2,823,000	2,868,033.44
Railroad unemployment insurance administration fund...	6,200,000	7,300,000	476,795.89
Tennessee Valley Authority.....	40,000,000	41,000,000	40,806,800.57
Veterans' Administration.....	563,669,500	557,379,400	557,070,722.10
Subtotal.....	6,646,076,870	8,550,915,441	8,432,433,972.34
2. Revolving funds (net):			
Farm Credit Administration:			
Reconstruction Finance Corporation funds:			
Crop production loans.....	150,000	200,000	468,768.12 *
Regional agricultural credit corporations.....	150,000	1,475,500 *	5,291,844.00 *
Joint-stock land banks.....		35,000 *	23,360.60 *
Farm-mortgage relief.....			63.42
Farm Credit Administration.....	125,000	175,000	170,651.74
Unclassified.....			50,000.00
Other.....	650,000	500,000	2,748,841.97 *
Public Works Administration			
Loans and grants to States, municipalities, etc....	26,500,000	80,400,000	100,765,694.91
Subtotal.....	27,575,000	79,764,500	92,453,595.38
3. Transfers to trust accounts, etc.:			
Railroad retirement account.....	132,500,000	121,500,000	107,097,412.82
Government employees' retirement funds (United States share):			
Civil service retirement fund.....	90,754,000	86,329,000	74,244,000.00
Foreign Service retirement fund.....	609,000	199,400	187,600.00
Canal Zone retirement fund.....	1,177,000	500,000	500,000.00
Alaska Railroad retirement fund.....	175,000	175,000	175,000.00
Subtotal.....	225,215,000	208,703,400	182,204,012.82
4. Debt retirements:			
Sinking fund.....	100,000,000	100,000,000	48,517,650.00
Received from foreign governments under debt settlements..			120,100.00
Estate taxes, forfeitures, gifts, etc.....			9,608,700.00
Subtotal.....	100,000,000	100,000,000	58,246,450.00
Total, exclusive of special items.....	6,998,866,870	8,939,383,341	8,765,338,030.54
Supplemental items:			
General.....	100,000,000	100,000,000	.....
Relief.....	1,125,000,000		.....
Emergency national defense.....	300,324,700	159,870,300	.....
Grand total, general and special accounts.....	8,524,191,570	9,199,253,641	8,765,338,030.54
Excess of expenditures over receipts.....	2,976,231,570	4,032,813,641	3,600,514,404.95

* Excess of credits, deduct.
U.S. Employment Service.

† Included in Agricultural Adjustment Administration.

‡ Includes payments to States †

the former Old Age Reserve Account, which was to be operated on an actuarial basis to provide old age pensions, the amendments approved Aug. 10, 1939, substituted a Federal Old-Age and Survivors' Insurance Trust Fund, which will constitute merely a reserve of moderate size to facilitate the smooth operation of the old-age pension scheme. Benefit payments are to come out of current tax receipts, without material reliance upon income earned on the reserve. This change greatly reduces the prospective volume of Federal obligations to be absorbed by the social security funds as investments for their reserves.

The Public Debt. The gross public debt of the United States at the end of the calendar year 1939 consisted of \$41,445,000,000 of direct obligations and \$5,700,000,000 of guaranteed obligations. This represented an increase for the calendar year of

\$2,546,000,000 in direct obligations and \$708,000,000 in indirect obligations.

The most remarkable feature of the public debt during 1939 was the rapid acceleration in sales of United States savings bonds, as the Treasury's active campaign to promote the distribution of these baby bonds brought substantial results. Since these bonds yield 2.9 per cent to buyers who hold them for 10 years, and since the Treasury redeems them in cash at any time on demand, the question was raised whether the rapid growth in the popularity of these securities was an unmixed blessing for the Federal government. They are not only a costly financing instrument, but also expand the Treasury's potential cash liabilities.

The public debt at the end of the calendar year 1939 was as follows, according to the Treasury's preliminary statement:

PRELIMINARY STATEMENT OF THE PUBLIC DEBT, DEC. 31, 1939

BONDS:

3% Panama Canal loan of 1961.....	\$49,800,000.00
3% Conversion bonds of 1946-47.....	28,894,500.00
2½% Postal Savings bonds (18th to 49th series).....	117,673,020.00
	\$196,367,520.00

PRELIMINARY STATEMENT OF THE PUBLIC DEBT, DEC. 31, 1939—(Continued)

TREASURY BONDS:		TREASURY BONDS—Continued.	
4½% bonds of 1947-52.....	\$758,945,800.00	2½% bonds of 1945-47.....	1,214,428,950.00
4% bonds of 1944-54.....	1,036,692,900.00	2½% bonds of 1948-51.....	1,223,495,850.00
3½% bonds of 1946-56.....	489,080,100.00	2½% bonds of 1951-54.....	1,626,687,150.00
3½% bonds of 1943-47.....	454,135,200.00	2½% bonds of 1956-59.....	981,827,050.00
3½% bonds of 1940-43.....	352,993,450.00	2½% bonds of 1949-53.....	1,786,140,650.00
3½% bonds of 1941-43.....	544,870,050.00	2½% bonds of 1945.....	540,843,550.00
3½% bonds of 1946-49.....	818,627,000.00	2½% bonds of 1948.....	450,978,400.00
3% bonds of 1951-55.....	755,432,000.00	2½% bonds of 1958-63.....	918,780,600.00
3½% bonds of 1941.....	834,453,200.00	2½% bonds of 1950-52.....	1,185,841,700.00
3½% bonds of 1943-45.....	1,400,528,250.00	2½% bonds of 1960-65.....	1,485,385,100.00
3½% bonds of 1944-46.....	1,518,737,650.00	2% bonds of 1947.....	701,074,900.00
3% bonds of 1946-48.....	1,035,874,400.00	2% bonds of 1948-50.....	571,431,150.00
3½% bonds of 1949-52.....	491,375,100.00	2½% bonds of 1951-53.....	1,090,958,100.00
2½% bonds of 1955-60.....	2,611,093,650.00		26,880,711,900.00
United States Savings bonds (current redemption value):			
Series A—1935.....			175,798,987.00
Series B—1936.....			321,739,841.50
Series C—1937.....			420,324,421.00
Series C—1938.....			507,458,635.00
Series D—1939.....			693,401,737.50
Unclassified sales.....			90,157,102.42
			2,208,880,724.42
Adjusted service bonds of 1945.....			270,657,768.50
Adjusted service bonds (Government life insurance fund series).....			500,157,956.40
			770,815,724.90
Total bonds.....			30,056,775,869.32
TREASURY NOTES:			
1½% series A—1940, maturing Mar. 15, 1940.....			77,406,100.00
1½% series B—1940, maturing June 15, 1940.....			738,428,400.00
1½% series C—1940, maturing Dec. 15, 1940.....			737,161,600.00
1½% series A—1941, maturing Mar. 15, 1941.....			676,707,600.00
1½% series B—1941, maturing June 15, 1941.....			503,877,500.00
1½% series C—1941, maturing Dec. 15, 1941.....			204,425,400.00
1½% series A—1942, maturing Mar. 15, 1942.....			426,349,500.00
2% series B—1942, maturing Sept. 15, 1942.....			342,143,300.00
1½% series C—1942, maturing Dec. 15, 1942.....			232,375,200.00
1½% series A—1943, maturing June 15, 1943.....			629,116,900.00
1½% series B—1943, maturing Dec. 15, 1943.....			420,973,000.00
¾% series A—1944, maturing June 15, 1944.....			415,519,500.00
1% series B—1944, maturing Mar. 15, 1944.....			515,210,900.00
1% series C—1944, maturing Sept. 15, 1944.....			283,006,000.00
			6,202,700,900.00
3% Old-age reserve account series, maturing June 30, 1941 to 1944.....			1,435,200,000.00
3% Railroad retirement account series, maturing June 30, 1942 to 1944.....			77,200,000.00
4% Civil service retirement fund, series 1940 to 1944.....			540,500,000.00
4% Foreign Service retirement fund, series 1940 to 1944.....			3,795,000.00
4% Canal Zone retirement fund, series 1940 to 1944.....			4,250,000.00
4% Alaska Railroad retirement fund series, maturing June 30, 1941 to 1944.....			738,000.00
2% Postal Savings System series, maturing June 30, 1942 to 1944.....			71,500,000.00
2% Government life insurance fund series, maturing June 30, 1943 and 1944.....			3,259,000.00
2% Federal Deposit Insurance Corporation series, maturing Dec. 1, 1943 and 1944.....			71,000,000.00
			8,410,142,900.00
CERTIFICATES OF INDEBTEDNESS:			
4% Adjusted service certificate fund series, maturing Jan. 1, 1940.....			14,800,000.00
2½% Unemployment trust fund series, maturing June 30, 1940.....			1,509,000,000.00
			1,523,800,000.00
TREASURY BILLS (MATURITY VALUE):			
Series maturing:	Series maturing—Continued.	Series maturing—Continued.	
Jan. 3, 1940...\$100,548,000.00	Feb. 7, 1940...\$100,320,000.00	Mar. 13, 1940...\$100,044,000.00	
Jan. 10, 1940...100,198,000.00	Feb. 14, 1940...100,206,000.00	Mar. 20, 1940...100,244,000.00	
Jan. 17, 1940...150,279,000.00	Feb. 21, 1940...100,163,000.00	Mar. 27, 1940...101,021,000.00	
Jan. 24, 1940...150,159,000.00	Feb. 28, 1940...100,116,000.00		1,454,743,000.00
Jan. 31, 1940...150,500,000.00	Mar. 6, 1940...100,945,000.00		
Total interest-bearing debt outstanding.....			41,445,461,769.32
MATURED DEBT ON WHICH INTEREST HAS CEASED:			
Old debt matured—issued prior to Apr. 1, 1917 (excluding Postal Savings bonds).....			\$3,895,800.26
2½% Postal Savings bonds.....			36,160.00
3½%, 4%, and 4½% First Liberty Loan bonds of 1932-47.....			11,915,150.00
4% and 4½% Second Liberty Loan bonds of 1927-42.....			1,216,200.00
4½% Third Liberty Loan bonds of 1928.....			1,943,650.00
4½% Fourth Liberty Loan bonds of 1933-38.....			16,318,550.00
3½% and 4½% Victory notes of 1922-23.....			598,750.00
Treasury notes, at various interest rates.....			22,547,800.00
Certificates of indebtedness, at various interest rates.....			4,016,750.00
Treasury bills.....			35,882,000.00
Treasury savings certificates.....			215,075.00
			98,585,885.26
DEBT BEARING NO INTEREST:			
United States notes.....			346,681,016.00
Less gold reserve.....			156,039,430.93
			190,641,585.07
Deposits for retirement of national bank and Federal Reserve bank notes.....			202,498,506.50
Old demand notes and fractional currency.....			2,031,728.28
Thrift and Treasury savings stamps, unclassified sales, etc.....			3,236,533.99
			398,408,353.84
Total gross debt.....			41,942,456,008.42

COMPARATIVE PUBLIC DEBT STATEMENT
(On the basis of daily Treasury statements)

	Mar. 31, 1917, pre-war debt	Aug. 31, 1919, when war debt was at its peak	Dec. 31, 1930, lowest post-war debt	Dec. 31, 1938	Nov. 30, 1939	Dec. 31, 1939
Gross public debt	\$1,282,044,346.28	\$26,596,701,648.01	\$16,026,087,087.07	\$39,427,183,901.74	\$41,305,056,749.64	\$41,942,456,008.42
Gross public debt per capita	12.36	250.18	129.66	301.68	313.94	318.59
Computed rate of interest per an- num on interest- bearing public debt (percent)	2.395	4.196	3.750	2.586	2.594	2.598
Obligations of Gov- ernmental Agen- cies guaranteed by the United States:						
Unmatured principal ^a				4,991,808,701.33	5,620,715,823.67	5,621,069,023.67
Matured principal and interest for which cash has been de- posited with or held by Treasurer of the United States ^b				4,023,014.33	92,420,039.50	86,952,340.98
General fund bal- ance ^c	74,216,460.05	1,118,109,534.76	306,803,319.55	3,083,505,924.62	2,165,527,577.66	2,476,160,943.36

^a Does not include obligations owned by the Treasury as follows: Dec. 31, 1938, \$787,796,054.17; Nov. 30, 1939, \$107,244,445.50; Dec. 31, 1939, \$101,170,945.50.

^b Amounts are included in the general fund balances shown herein, on and after Sept. 30, 1939.

^c Includes amounts held by the Treasurer of the United States, as shown above, for the payment of the principal of and interest on matured obligations guaranteed by the United States, on and after Sept. 30, 1939.

For foreign countries, see the section on *Finance* under each; see also, *TAXATION; CUSTOMS, BUREAU OF*.

JULES I. BOGEN.

PUBLIC HEALTH SERVICE. The important functions of the U.S. Public Health Service authorized by law are the prevention of the introduction of disease into the United States from abroad, research in the cause and prevention of disease, co-operation with the States in all health matters and assistance, through grants-in-aid, in the development and improvement of their health services, control of the manufacture and sale of biologic products used in the prevention and treatment of disease, and hospitalization and medical care of certain legal beneficiaries.

During the fiscal year 1939 the quarantinable diseases prevailed in practically the same areas and to about the same degree as in the preceding year; but no case of any of these diseases passed the barriers of quarantine, although cholera was unusually prevalent in the Orient and yellow fever was present in South America. During the fiscal year, quarantine officers of the Public Health Service inspected 15,525 vessels carrying 1,926,529 persons (passengers and seamen), and fumigated 830 vessels. At various ports of entry, a total of 1,852,338 alien passengers and seamen were examined under the immigration laws, and 23,336 were certified as being afflicted with some mental or physical defect or disease. Of 72,488 applicants for immigration visas examined by medical officers of the Public Health Service at American consulates in foreign countries, 1021 were found to have defects or diseases requiring exclusion, and 13,466 were afflicted with a disease or condition likely to affect their ability to earn a living. Inspection for quarantine and immigration purposes were made at airports of entry of 1878 airplanes, carrying 25,842 passengers, of whom 8521 were aliens.

The research work of the Public Health Service is conducted at the National Institute of Health (of which the National Cancer Institute is a part), located at Bethesda, Md., near Washington, D. C., and at field stations. Three of the five buildings of the National Institute of Health were occupied during the fiscal year 1939, and the National Cancer Institute building, erected at a cost of \$750,000, was completed Sept. 26, 1939.

The investigations have for their purpose the securing of additional knowledge regarding the cause and prevention of disease and include studies in epidemiology, chemistry, pharmacology, zoology, pathology, chemo-therapy, immunization, biologies, statistics, and public health methods. Important research during the fiscal year 1939 included infectious diseases, virus diseases, heart disease, cancer, industrial diseases, basic chemical and pharmacological studies with reference to practical application in medicine and the biological sciences, and the standardization of biologic products. New foci of spotted fever were found in the eastern States, and 495 liters of protective vaccine were prepared and distributed. Endemic typhus fever prevalence was noted in additional areas in the South, and the disease was found to have lost its urban limitations. The tick was identified as a carrier in three acute febrile diseases in addition to spotted fever. In laboratory experiments, several sulfanilamide derivatives showed a chemotherapeutic activity superior to sulfanilamide in streptococcal infections, and beneficial results were obtained from sulfanilamide and sulfapyridine therapy in the marine hospitals. In investigations made on heart disease, no infectious agent was found, but indications pointed to the possibility of heredity as a predisposing factor. In the study of dietary deficiency diseases, such as pellagra, rickets, and scurvy, a new vitamin- (riboflavin-) deficiency disease was discovered which had probably existed in this coun-

try for many years. The name "ariboflavinosis" was suggested for the condition.

The greatest advance in public health services in 1939 and in recent prior years has come as the result of Federal grants-in-aid to the States, under the health provisions of the Social Security Act of 1935 and the Venereal Disease Control Act of 1938, for the improvement and expansion of State and local health services and the training of their personnel. As a result of this financial aid and of the consultative and technical assistance of the Public Health Service, more effective public health administration has been secured in such fields as engineering, nursing, nutrition, industrial hygiene, and communicable disease control. Many States have enacted new health legislation and created special divisions in their health departments, such as those relating to industrial hygiene and venereal disease control.

The oldest function of the Public Health Service—the treatment and hospitalization of American merchant seamen (authorized by the original act of 1798) and other legal beneficiaries—was continued through 26 marine hospitals, 124 relief stations located in the chief ports of the United States and its possessions, and 133 contract hospitals located in ports not served by the marine hospitals. During the fiscal year 1939, a total of 405,424 accredited beneficiaries were furnished 2,028,264 hospital days relief and 1,391,785 office treatments. A total of about 6000 beds are provided by these hospitals, of which at the close of the fiscal year, 5163 were occupied.

The Public Health Service also conducts two hospitals, one at Lexington, Ky., and one at Fort Worth, Tex., for the confinement and treatment of drug addicts, mostly Federal prisoners. The Fort Worth hospital was opened for admissions on Nov. 8, 1938, and had 295 patients at the end of the fiscal year. An additional unit, with a capacity for 717 patients is under construction. The Lexington hospital, which was opened on May 29, 1935, had a daily average population of 960 during the year. See NARCOTICS CONTROL.

Medical, psychiatric, and other services in Federal penal and correctional institutions under the Bureau of Prisons were furnished and supervised, and psychiatric service was provided for 10 United States courts.

Health conditions in the United States were good during 1938 and 1939. The provisional death rate for 1938, 10.6 per 1000 population, was the lowest ever recorded for this country; and while the figure for 1939 may be slightly higher, preliminary reports indicate a continuance of favorable health conditions as revealed by the general mortality rate. (See VITAL STATISTICS.)

On July 1, 1939, the Public Health Service was transferred from the Treasury Department, where it had functioned administratively since it was created in 1798, to the Federal Security Agency, established in accordance with the Reorganization Act, approved Apr. 3, 1939, and the first plan on Government reorganization submitted by the President to Congress on Apr. 25, 1939.

Detailed accounts of the activities of the Public Health Service may be found in the Annual Reports of the Surgeon General.

THOMAS PARRAN.

PUBLIC ROADS ADMINISTRATION.
See FEDERAL WORKS AGENCY; ROADS AND STREETS.

PUBLIC UTILITIES. See BUSINESS REVIEW; ELECTRIC LIGHT AND POWER; TENNESSEE VALLEY AUTHORITY.

PUBLIC WORKS ADMINISTRATION. On June 16, 1933, the Federal Emergency Administration of Public Works came into existence when President Roosevelt signed the National Industrial Recovery Act. Creation of jobs through the construction of useful and permanent public works, with the resultant stimulus to the heavy goods industries, was the goal.

There have been five Public Works programs and, as of Nov. 1, 1939, allotments had been made to 17,819 Federal projects and 16,657 non-Federal projects. These are located in 3068 of the 3071 counties. The estimated cost of all of the projects is \$5,860,746,362, the non-Federal costing \$4,199,772,482 and the Federal projects, \$1,775,232,880. The share of the applicant in the non-Federal projects is approximately \$1,800,000,000, and as of Nov. 1, 1939, there were 1809 of these, allotted under the 1938 program, still under construction.

The greater part of PWA's work in 1939 has been on projects allotted under the 1938 appropriation. Construction under this program was started by Jan. 1, 1939, and it will be substantially complete by June 30, 1940. As in all except the first program when 30 per cent of the labor and material costs was allowed as a grant, PWA made grants on non-Federal works of 45 per cent of the total estimated cost. The sponsor furnished the remainder of the cost.

With all funds allotted, PWA in the fall of 1939 returned to sponsors 5043 non-Federal applications for projects with a total estimated cost of \$1,748,868,777.

By Nov. 30, 1939, PWA construction had produced 7,010,941,000 man-hours of employment, of which 2,003,126,000 were at the site of construction and 5,007,815,000 in the production, fabrication, and transportation of materials and supplies.

Charged with direct supervision of all Federal projects were 70 Governmental Departments and Agencies. Twenty-nine per cent of Federal PWA expenditures has been for control and improvement of waterways and harbors, to provide irrigation, navigation, flood control, and water power, to prevent soil erosion and to deepen harbors and add to coastal facilities. Twenty-six per cent has gone for transportation, chiefly in the construction of Federal-aid highways. Seventeen per cent has been for Federal buildings, including post offices, courthouses, hospitals and penal institutions, warehouses, residences and laboratories. Fifteen per cent has been for construction of naval and Coast Guard vessels, and additional sums for improvement of Army camps, aviation fields and National Parks. See PRISONS, PAROLE, AND CRIME CONTROL.

Thirty-two railroads received PWA loans to the sum of \$200,974,500 for work in 45 States which included electrification, improvements of road beds, purchase of rails and modern rolling stock.

The Public Works Administration started a low-cost housing and slum-clearance program. There were 51 projects with an allocation of \$147,000,000 for the program and of this amount, \$136,669,759 had been allotted up to Oct. 27, 1937, when the projects were transferred to the United States Housing Authority.

Funds for the five PWA programs were supplied by appropriations and authorizations as fol-

lows: 1933—\$3,300,000,000 (appropriation); 1934—\$394,000,000 (appropriation); 1935—\$313,000,000 (authorization); 1936-37—\$291,000,000 (authorization); 1938—\$965,000,000 (appropriation).

Thirty per cent of non-Federal allotments have been for educational facilities. Twenty-seven per cent has been for transportation, including aviation. Twenty-two per cent has gone to water and sewerage systems, and 7 per cent to hospitals. A breakdown of major types of non-Federal PWA projects as of Nov. 1, 1939 follows:

Type of project	Number of projects	Estimated cost	Loan	Grant
Roads and Highways.....	605	\$286,282,043	\$ 11,786,000	\$115,849,318
Streets.....	779	125,719,726	3,633,114	48,631,823
Grade Crossing Elimination.....	29	27,668,506	870,000	10,573,714
Sewer Systems.....	1,525	467,950,727	106,653,425	171,847,380
Water Systems.....	2,412	309,093,849	53,924,916	112,833,652
Electric Distribution Systems.....	53	9,069,543	3,997,500	2,994,746
Power Construction.....	228	86,639,831	18,931,200	36,061,190
Secondary Schools.....	6,450	940,580,711	61,528,688	386,215,486
Colleges and Universities.....	662	201,781,484	29,130,535	81,467,137
Public Libraries.....	105	11,933,437	183,100	4,877,477
Municipal Auditoriums and Armories.....	102	30,898,343	922,317	10,796,936
Courthouses and City Halls.....	628	128,610,284	6,202,519	52,557,987
Hospitals and Institutions.....	671	304,086,953	21,951,941	115,743,068
Penal Institutions.....	178	37,064,589	2,384,389	13,179,460
Social, Recreational Buildings.....	131	16,528,970	706,800	7,018,238
Flood Control, Water Power & Reclamation.....	130	175,638,528	94,404,011	65,127,566

E. W. CLARK.

PUBLISHING. See BOOK PUBLISHING.

PUERTO RICO, pwě'rō rě'kō. A West Indian island forming a territory of the United States; acquired from Spain under the terms of the Treaty of Paris, signed Dec. 10, 1898. Capital, San Juan. Small adjacent islands, Vieques and Culebra, are included in the jurisdiction and statistics.

Area and Population. Puerto Rico has an area of 3435 square miles; its inhabitants number 1,805,480 (estimate for July 1, 1938); it had, in 1935, 1,723,534 (census of December 1). Colored inhabitants (1938) were stated as 417,401; whites, 1,388,079. Yearly births (1938) numbered 69,823; they came to 38.7 per 1000. Deaths, 33,870, came to 18.8 per 1000. The births ran to more than double the deaths; the excess of births, 19.9 per 1000, for 1938 and near this figure in previous years, tended to increase the population by almost 2 per cent a year; emigration to the Continental United States and to some of its possessions had worked to moderate this increase. Despite this, the density of the population, now one of the highest among agricultural countries, has risen from 280.3 to the square mile for 1899, to 525.6 (1938). Nearly four persons out of nine were below the age of 14 years. Of the population of 1935, 563,616 were classed as urban; 1,159,918, as rural. Spanish is still the prevailing language, but English is widely understood. The predominant religious allegiance is to the Roman Catholic Church.

The populations of the chief cities (1935) are: San Juan, 137,215; Ponce, 60,867; Mayagüez, 44,907; Caguas, 22,599; Rio Piedras, 16,849; Guayama, 16,075; Arecibo, 14,332; Bayamón, 13,873; Aguadilla, 11,133.

Education. At the end of the academic year 1938-39 enrollments of pupils in free public schools numbered 281,359; of these, only 15,835 were in grades 9-12. The great mass of pupils were in the elementary grades. Conditions worked against developing secondary schools; though two-fifths of the insular budget went for education, the pupils in the public schools came to only one-half of the

number of persons classed as of school age. Facilities were still scanty for even elementary teaching to all the young, particularly among the rural population. The year's appropriations for public schools totaled \$5,802,873. Teachers and field personnel numbered 6562; schools, 1846, including 48 high schools and 7 trade schools. The University of Puerto Rico had, in the year 1938-39, 3186 students at its main site in Rio Piedras and 754 in its College of Agriculture and Mechanic Arts, at Mayagüez; it had also 754 taking extension courses.

A commission of educators, sent from the United States by the President, visited the University in 1939 and reported favorably on a plan for establishing in connection with it an Inter-American University for students from other Latin-American lands.

Production. The growing of sugar cane is by far the main cash-yielding crop of the island. The crop of cane ready for harvest in 1939 contained an estimated 1,200,000 tons of sugar. Puerto Rico's quota for the year, as revised, allowed sales of only 806,642 tons for the Continental United States and 70,812 for use in the island. The harvest was limited to 858,000 tons (sugar content); over 667,000 tons of sugar were left in unharvested cane. According to the Governor's report the income from sugar produced in 1939 consequently fell by \$23,285,000 below that for 1938. The quotas for sugar (see UNITED STATES) were suspended early in September, and Puerto Rico had opportunity to sell an additional 150,000 tons, more or less, at improved prices. About 870,000 tons of sugar, mainly raw, were extracted from cane in the crop year 1938-39; the equivalent in refined sugar was 823,020 tons. For the year 1937-38, the corresponding tonnages were 1,077,149 and 1,018,983. See *History*.

The Federal and Insular authorities donated unused cane land for "co-operative subsistence gardening," under official supervision. Plots thus donated, none over three acres, exceeded 10,000 acres in all by the middle of 1939. The cultivation of tobacco also suffered sharp reduction. Harvested acreage fell to 18,688 (1939) from 63,000 (1938); production, to 11,688,384 lb. (1939) from the exceptionally big total of 44,069,272 lb. (1938); but the average price to the farmers rose to 19 cents a lb. (1939) from 11 cents (1938). The production of coffee in the crop year 1938-39 totaled 18,949,198 lb.; the price obtained by the grower averaged 14 cents a lb.

External Trade. Puerto Rico's trade with the outside world, by fiscal years ended with June 30, made the following totals: imports fell to \$82,724,182 (1939) from \$93,314,783 (1938); exports rose to \$86,486,570 (1939) from \$82,077,178 (1938).

Trade with the United States accounted for more than nine-tenths of imports and more than 97 per cent of exports. Imports from the United States came to \$75,684,719 for 1939 and \$84,987,994 for 1938; corresponding exports, to \$84,782,650 and \$79,808,113. Over three-fifths, by value, of exports to the United States (1939) consisted of sugar, totaling \$53,604,381; exports of tobacco and its manufactures amounted to \$7,464,394; those of textiles and their manufactures—chiefly garments of cotton, linen, or silk—to \$15,162,738. From the United States, Puerto Rico got (1939) \$14,798,894 in textile fibers and manufactures, chiefly of cotton; \$7,846,834 in grains and preparations thereof, chiefly rice; \$7,672,811 in machinery and vehicles, largely automobiles.

Finance. For the fiscal year ended with June 30, 1939, collections of revenue for the general fund of the Insular government totaled \$15,424,505. The year's disbursements amounted to \$15,844,409. Internal revenue, \$12,078,672, supplied most of the collections. Of the year's disbursements, \$5,896,030 went for education, \$1,934,567 for the work of the Department of Health, and \$1,341,133 for the Insular Police. The government's bonded indebtedness at the end of the fiscal year totaled \$26,215,000; this was less by \$1,185,000 than a year before.

Transportation. The Island was credited (1939) with having 11,252 miles of roads (see **ROADS AND STREETS**). Railroads, aggregating 922 miles, included 574 miles of lines built to serve the sugar industry. Pan American Airways maintained frequent service between San Juan and Miami, Fla. There was also service by airplane between the Island and South America and West Indian points.

Government. In accordance with the organic act of March 2, 1917 (the Jones Act), as later amended, Puerto Rico has the political status of an organized territory of the United States. Its citizens are American citizens. Governor in 1939, Blanton Winship, resigned; successor, Admiral William D. Leahy, U.S.N. retired, who took office September 11.

HISTORY

Relations with Federal Government. Governor Blanton Winship departed from Puerto Rico, June 25, amid a demonstration of popular good will reportedly without precedent in the Territory. He had held office for about 5½ years, had won credit for industry, capability, patience, pluck, and sympathetic insight, and had helped to effect many changes welcome to the Islanders. At a public dinner in his honor, June 19, at San Juan, he proposed a toast to Puerto Rico's desire to become a State of the Federal Union. It was reported that President Rafael Martínez Nadal of the Insular Senate, Speaker García Méndez of the lower legislative house, and other leaders had requested that he be kept in office. Disagreement with U.S. Secretary of the Interior Ickes over the proper treatment for the Island was reported to have led to the ending of Blanton's tenure.

Admiral W. D. Leahy, who became Governor September 11, had lately been Chief of Naval Operations. He had thus full means to know the Navy's plans for defense in West Indian and Central American waters and to help with the construction intended, to this purpose, in Puerto Rico. His inaugural speech admitted the need of a change in the sugar quota and a modification of the Federal regulation of wages and hours.

A reduced quota of exportation of sugar to the Continental United States went into effect in 1939. The Federal act regulating wages and hours applied to Puerto Rico as well as to the States of the Union. These two influences, combined with low prices for sugar, caused further grave impairment of the Islanders' livelihood. Minimum wages of 25 cents and in some cases 30 cents an hour tended to make Puerto Rican sugar too dear to produce for the United States' market. The consequence appeared in a strike won in April by some 20,000 workers in the sugar centrals, for 25 cents an hour, and the premature shutting down of a great part of the centrals early in May. The number of persons thrown out of work was put at 40,000; the apparent value of sugar cane left in the fields, at \$20,000,000.

U.S. District Judge Cooper, in San Juan, September 26, held the Federal regulation of wages and hours valid in Puerto Rico. Concurrently the provisions of the U.S. Sugar Act of 1937 cut down, below the level of 1938, the quantity of sugar that Puerto Rico was allowed to supply in 1939. The situation of the Island, with regard to its chief source of income, was bad and threatened to grow worse. It was mended, temporarily at least, by a dearth of sugar in the States, felt shortly after the start of the European War, which moved the President to suspend the quotas. There followed a resumption of sugar-grinding and exports in the autumn.

Federal Aid. The chief provision made by Congress for aid to the Puerto Ricans was the appropriation of \$7,000,000 to be dispensed by the Puerto Rican Reconstruction Administration. An Insular Reconstruction Authority was projected, to aid Puerto Rico and the Virgin Islands with about \$20,000,000. Congress provided for the expenditure of about \$30,000,000 for additional defenses in Puerto Rico, and of this sum it was expected that part would go for Insular labor of divers sorts. A contract for construction to the total of \$8,300,000 on an air base at San Juan was let, November 1.

Renewed Plea for Statehood. A joint commission created by the Insular Legislature in its regular session sent to the President and Congress, June 4, a memorial renewing the request that Puerto Rico be made a State; Resident Commissioner Santiago Iglesias introduced in the U.S. House of Representatives, June 26, a bill for granting Statehood. The significance of these moves lay less in any likelihood of early Federal action than in the evidence, afforded by such a move, of renewed disquiet in the Island, over prospects under the existing status.

Political Parties. The Nationalists, seeking entire independence, were under eclipse because of the terrorist attempt on the life of Governor Winship in 1938. The courts continued the trial of Nationalist leaders accused of complicity in that attempt or other conspiracies against the United States. Pedro Albizu Campos, at the time a prisoner in the Federal prison at Atlanta, was nevertheless re-elected, February 22, president of the Nationalist party. The President of the Puerto Rican Senate, Rafael Martínez Nadal, who was also the leader of the Union-Republican majority coalition of parties, won strong support among his followers by a speech of March 26 condemning the treatment of the Island by the United States.

Legislation. The regular session of the Legislature voted the transfer of the Isla Grande lands to the United States for a military air base; au-

thorized the Insular government's acquisition of the Porto Rico Railway, Light, and Power Company; and restored the franchise to voters who had failed to vote in previous elections. A special session, convening May 10, increased the rates of the income tax, provided for the annual budget of the Puerto Rico Housing Authority, and remitted arrears of the tax on property, up to totals of \$400.

Santiago Iglesias, Resident Commissioner, died in Washington on December 5 (see *NECROLOGY* for obituary) and his son-in-law, Senator Bolívar Pagan, was appointed by Governor Leahy to the vacant post late in December.

PULITZER, pŭ'līt-sēr, RALPH. An American publisher, died in New York, June 14, 1939. He was born in St. Louis, Mo., June 11, 1879, the eldest son of Joseph Pulitzer. After graduation from Harvard University in 1900 he went to work on the New York *World* in an editorial capacity and in 1906 was made vice-president of the Press Publishing Co., which published that newspaper, and of the Pulitzer Publishing Co., publishers of the St. Louis *Post-Dispatch*. He left the former Company to become president of the *Dispatch* during 1907-11, when he rejoined the Press Publishing Co., as president, succeeding his father. He retired in 1930. From 1924 to 1929, Mr. Pulitzer edited the New York *World*.

During the World War, he served in the U.S. Naval Reserve Corps and made a tour of the French battlefields, about which he wrote *Over the Front in an Aeroplane* (1915). A big game hunter and sportsman, in 1930 he conducted a scientific expedition to Portuguese West Africa for the Carnegie Museum of Pittsburgh to collect specimens of birds, insects, and reptiles. For a brief period in 1934, he was Newspaper Code Administrator of the National Recovery Act, but resigned because of the protests of the American Newspaper Guild. Mr. Pulitzer also wrote *New York Society on Parade* (1909).

PULITZER PRIZES. A series of awards established in 1915 by the will of Joseph Pulitzer, publisher of the New York *World*, presented annually by Columbia University on recommendation of the advisory board of the Pulitzer School of Journalism, for outstanding achievements in letters and literature.

In 1939, as announced on May 1, the awards in literature were: Novel, *The Yearling*, by Marjorie Kinnan Rawlings; play, *Abe Lincoln in Illinois*, by Robert E. Sherwood; history, *A History of American Magazines*, by Frank Luther Mott; verse, *Selected Poems*, by John Gould Fletcher; biography, *Benjamin Franklin*, by Carl Van Doren.

In journalism, awards were made to Louis P. Lochner, Berlin correspondent of The Associated Press, "for distinguished service as a foreign or Washington correspondent during the year"; to R. G. Callvert of *The Portland (Ore.) Oregonian*, "for distinguished editorial writing during the year," as exemplified in his editorial "My Country 'Tis of Thee . . ." published Oct. 2, 1939; to *The Miami (Fla.) Daily News*, "for the most disinterested and meritorious public service rendered by an American newspaper during the year," in recognition of a successful campaign for the ousting of a majority of the Miami City Commissioners; to Thomas L. Stokes of the Scripps-Howard Newspaper Alliance for "a distinguished example of a reporter's work during the year," in recognition of his investigations of WPA con-

ditions in Kentucky. For distinguished examples of a cartoonist's work, Charles George Werner of *The Daily Oklahoman*, Oklahoma City, for his cartoon "Nomination for 1938," published Oct. 6, 1939.

PULP. See *PAPER AND PULP*.

PURDUE UNIVERSITY. A State technological institution in Lafayette, Ind., founded in 1869. The enrollment for the autumn of 1939 was 7121; registration in the 1939 summer session was 1651. There were 645 members on the faculty. The endowment amounted to \$340,000, and the income for the year was \$2,916,545. The library contained 147,357 volumes. During the year a flight training course was introduced, a Division of Education and Applied Psychology was organized, and Metallurgy added to the curriculum of the School of Chemical Engineering. President, Edward C. Elliott, Ph.D.

PWA. Public Works Administration (q.v.).

QATAR. See *ARABIA*.

QUAKERS. See *FRIENDS*.

QUARANTINE. See *PUBLIC HEALTH SERVICE*.

QUEBEC, kwě-běk'. An eastern province of Canada. Area, 594,534 square miles; population (1939 estimate), 3,210,000 compared with 2,874,255 (1931 census). Quebec had 13,281 Indians in 1934. During 1938 there were 78,145 births (24.6 per 1000); 32,609 deaths (10.3 per 1000); 25,044 marriages (7.9 per 1000). Chief cities (with 1931 population figures except where otherwise indicated): Quebec, the capital (130,594); Montreal (818,577); Verdun (64,144 in October, 1939); Three Rivers (35,450); Hull (29,433); Sherbrooke (28,933); Outremont (28,641); Westmount (24,235). In 1937 there were 704,660 students enrolled in schools of all kinds, including 36,476 students in the colleges and universities. The province has four universities—McGill, Bishop's, Laval, and Montreal.

Production. The gross agricultural revenue for 1938 was \$188,580,000 of which field crops represented \$81,023,000. Other important items were: Dairy products, \$55,702,000; farm animals, \$27,894,000; poultry products, \$8,829,000; maple products, \$2,910,000. Livestock (1939): 297,000 horses; 1,816,700 cattle, including milch cows; 646,700 sheep; 744,000 swine. Fur production for the year ended June 30, 1937, totaled 286,278 pelts valued at \$2,516,012. Output of the forests during 1937 equaled 1,050,087 M cu. ft. valued at \$58,577,529. In 1938 the fisheries catch was valued at \$1,954,000.

Mineral production (1938) was valued at \$68,965,594 of which gold (881,263 fine oz.) accounted for \$30,998,426; silver (1,189,495 fine oz.), \$517,157; asbestos (289,793 tons), \$12,890,195; copper (112,645,797 lb.), \$11,233,039; zinc (5,315,852 lb.), \$163,356; selenium (217,952 lb.), \$378,147. In 1937, from the 8518 manufacturing plants, with a total of 219,033 employees, the net value of products was \$445,885,666.

Government. For the year ended June 30, 1938, revenue amounted to \$53,344,037; expenditure, \$50,335,750. Ordinary revenue for the year ending June 30, 1939, was \$60,836,000; ordinary expenditure, \$55,948,091; net funded public debt totaled \$252,489,090. The government is vested in a lieutenant-governor who is advised by a responsible ministry, a legislative council of 24 members (appointed for life by the lieutenant-governor), and a legislative assembly of 90 members elected for a term of five years by popular

vote of the people (women do not vote nor are they eligible for legislative office). Quebec is represented in the Canadian parliament at Ottawa by 24 members in the Senate and 65 members in the House of Commons. Lieutenant-Governor, Maj. Gen. Sir Eugene Fiset (inaugurated Dec. 30, 1939); Premier, Adelard Godbout (Liberal). The Union Nationale party of Maurice Duplessis, who had been Premier since 1936, was voted out of power on Oct. 25, 1939, and succeeded by a Liberal government under Premier Adelard Godbout. See CANADA under History.

QUEENS COLLEGE. A college (formerly known as Queens-Chicora College) for women in Charlotte, N. C., founded in 1857; nonsectarian in purpose but under the direction of the Presbyterian Church. The enrollment for the autumn term of 1939 was 415. There were 35 members of the faculty. The income for the year was: From endowment \$12,000; from benevolences \$10,000; from student fees \$68,000. The library contained approximately 14,000 volumes. President, Hunter B. Blakely, D.D., Th.D., inducted in July, 1939.

QUEENSLAND. An Australian State. Area, 670,500 square miles; population, exclusive of full-blood aboriginals, 1,008,461 (Mar. 31, 1939, estimate), compared with 947,534 (1933 census). During 1938 there were 18,992 births (18.98 per 1000); 9201 deaths (9.19 per 1000); and 8853 marriages (8.85 per 1000). The principal cities are Brisbane, the capital, with 325,890 inhabitants (including suburbs) on Dec. 31, 1938; Rockhampton, 30,000 (1936); Townsville, 28,535 (1936); Toowoomba, 27,968 (1936); Ipswich, 22,885 (1936). During 1936 the 1690 State schools had an enrollment of 146,984 pupils; and Queensland University had 1145 students.

Production. Sugar cane, wheat, maize, hay, potatoes, cotton, grapes, tobacco, pineapples, and oranges are the main agricultural products. In the 1938-39 season, wheat production from 400,000 acres totaled 8,448,000 bu. Sugar (1936-37) aggregated 744,676 tons. The chief dairy products for 1937-38 were butter, 118,244,260 lb.; cheese, 11,963,445 lb.; bacon and ham, 19,607,223 lb. Wool (greasy) produced during 1938 totaled 174,751,280 lb. Livestock (Dec. 31, 1938): 22,500,000 sheep; 6,000,000 cattle; 445,000 horses; 320,000 swine.

The estimated value of mineral production for 1938 was £A3,966,119 of which gold accounted for £A1,334,788; coal, £A958,884; silver and lead, £A926,614; copper, £A203,967; tin, £A141,547. In 1938, from the 3063 factories, with 52,119 employees, the net value of production was £A18,602,958 (Australian £ averaged \$3.8955 in 1938).

Government. For the year ended June 30, 1938, revenue totaled £A17,339,731; expenditure, £A17,568,000; public debt (1939), £A127,503,000. Executive power is vested in a governor, assisted by an executive council of ministers who are also members of the legislative assembly. Parliament consists of a legislative assembly of 62 members elected by universal suffrage for three years. The legislative assembly elected on Apr. 2, 1938, was composed of 43 Laborites and 19 members of Independent Labor, United Australia and Country parties. Governor, Col. Sir Leslie Orme Wilson (appointed June, 1932; reappointed June, 1937); Premier, William Forgan Smith. See AUSTRALIA.

QUICKSILVER. Until the Spanish Civil war dislocated the quicksilver industry in that country, Spain was the principal world producer of the metal. Thus in 1936 Spain produced 43,424

flasks (76 lb.) against 42,732 flasks for Italy. But in 1937 Italy took the lead, producing 66,963 flasks, against only 28,357 flasks for Spain, and continued to hold first position in 1938. The United States ranks third in quicksilver production, the normal output ranging from 15,000 to 18,000 flasks per annum. California is the largest producer, followed by Oregon and Texas. Fifteen mines in these three States produce about 90 per cent of the domestic output.

The principal uses for quicksilver are in the manufacture of detonators for high explosives; gold recovery by amalgamation; manufacture of chemicals, dental amalgam, and barometers. No satisfactory substitute is known for the principal uses of the metal.

On account of the importance of quicksilver as a "strategic" metal in the economy of the United States, domestic resources have been carefully surveyed. Normal annual consumption runs from 25,000 to 35,000 flasks, about half of which has been imported. In 1939 the Bureau of Mines began publication of statistics showing the domestic position of the metal from month to month. The following summary is given in flasks of 76 lb.

SUMMARY OF STATISTICS, 1939

	Sept.	Oct.
Consumption	2,600	2,800
Production, domestic	1,500	1,500
Imports	189	200
Exports	128	364
Consumers' stocks ^a	9,200	8,500
Stocks in dealers' and importers' hands	3,000	2,400
Stocks held by producers ^b	318	178
Total stocks	12,518	11,078

^a Stocks at consumer's plant, in bonded warehouses, and owned by consumers, and in transit. ^b Stocks held by companies reporting to the Bureau (34 mines)

Following its usual war pattern the price of quicksilver in the United States rose sharply toward the end of 1939, although the rise was not justified with respect to available supplies. Opening the year at \$77 per flask of 76 lb., the price rose to \$90 in April, receded slightly during the summer and rose abruptly in September to \$140, closing the year at about that level.

H. C. PARMELEE.

QUIZ PROGRAMS. See RADIO PROGRAMS
RACINE TERCENTENARY. See FRENCH LITERATURE.

RACING. See AERONAUTICS; SPORTS.

RADCLIFFE COLLEGE. A nonsectarian college for women in Cambridge, Mass., founded in 1879. The enrollment for the autumn of 1939 was 1010. Instruction was given by approximately 400 teachers from Harvard University. The productive funds amounted to \$5,694,394 and the income, including tuition, for college purposes, was \$589,996. The library contained 90,000 volumes, exclusive of pamphlets. President, Ada Louise Comstock, A.M., Litt.D., LL.D., L.H.D.

RADIO. Again in 1939, events made the world radio-conscious. Through this medium of instantaneous communication, peoples in all parts of the world learned of Europe's tragic events while they were happening—from the invasion of Poland to the undramatic end of the *Graf Spee* off Montevideo, Uruguay.

In standard broadcast receivers, 1939 closed with indications of renewed efforts to improve circuits rather than cabinets. An experimental

model of a midget set is reported as being but a third the size of today's smallest. Its case was formed by placing the assembled set in a mold and then pouring the case in liquid form into the mold in which the case then solidified. Attention has been given to very small tubes and batteries for 1940 "pocket" sets. Built-in antennae were applied to more standard sets, eliminating aerial and ground connections; wide use of new permanent-magnet materials for speakers eliminated the usual field coils and enabled the use of lower voltages, a special advantage for small sets. Portable sets enjoyed a new spurt of public acceptance—to the discomfiture of those who like to get away from a loudspeaker once in awhile. Improvements made to mobile equipment for policemen, firemen, and public utility companies include improved frequency stability, a remote-control unit for the operation of a transmitter several miles away, and adaptation of a mobile transmitter for use as a public-address system for traffic direction or emergencies where commands must be given to firemen at work, to crowds, etc.

An order of the FCC effective Apr. 13, 1939, covering allocation of frequencies ranging from 30,000 to 300,000 kilocycles vitally affected such important services as television, facsimile, relay, and experimental broadcasts. The U.S. Army is reported as having ordered two completely radio-controlled planes for anti-aircraft target practice. A miniature radio beacon mounted on a buoy in Boston Harbor helps ships to find their way in thick weather. KDKA, the world's pioneer broadcasting station, was moved from Saxonburg to Allison Park, Pa., nearly 20 miles closer to Pittsburgh, where new buildings and the latest in equipment improved its service. The Morris Liebmann Memorial Prize for 1939 was awarded by the Institute of Radio Engineers to H. T. Friis of the Bell Telephone Laboratories, New York, in recognition of "his investigations in radio transmission, including the development of methods of measuring signals and noise, and the creation of a receiving system for mitigating selective fading and noise interference." (See ADVERTISING; BROADCASTING STATIONS, BUSINESS REVIEW, RADIO PROGRAMS, TELEPHONY, and TELEVISION.)

G. ROSS HENNINGER.

Equally important, from a technological standpoint, as the introduction of television last year was the further development of the radically different system of radio transmission known as "frequency modulation" (see 1938 YEAR BOOK). This new means of sending sound and electrical impulses through the air, the indirect result of a search for a static-eliminating circuit in 1915, promises to revolutionize every department of the broadcasting industry. By contrast, its potentialities dwarf even the future possibilities of television.

Outstanding among its advantages over the present amplitude modulation system are freedom from fading and static, both natural and man-made; absolute fidelity of reproduction and greater efficiency with less power. Added to these are numerous engineering practicabilities hitherto not possible. In an everyday application of one of these it was demonstrated that a radio-linked chain of low-power, low cost "fm" senders, relaying full range sound against a dead silent background, effectively replaced expensive telephone-wire connections between outlets. In another it was shown that two separated stations

could operate simultaneously on the same wavelength without interference, even at the midway point where both waves met. In the realm of fantasy, where economics can be disregarded, it would be possible to set up thousands of "fm" stations as against the 806 American broadcasting stations now forced to share time and facilities on the country's 109 wave-lengths.

Operating against the immediate widespread use of "fm," however, are the facts that it would cause the obsolescence of more than 46,000,000 receiving sets now in use and bring about the replacement of \$70,000,000 of station equipment. Nevertheless there are already more than a dozen "fm" stations in operation or under construction and at least five manufacturers are prepared to make the special receivers required for the static-free programs.

In the state and municipal realm, legislative action outlawed man-made static in several sections of the country, as the first move in a national campaign to silence radio noises. Three states and more than a dozen cities passed ordinances prohibiting the use of any motor or electrical device capable of generating interference. In general, however, the laws lacked strong enabling clauses to insure their enforcement. (See also FEDERAL COMMUNICATIONS COMMISSION.)

The radio manufacturing industry had its greatest boom in 1939 with a production of more than nine million models, an all-time record high. Factory and retail sales records showed an increase of 25 to 30 per cent over 1938, when sales exceeded seven million sets. Unit values were up, and console sales in some cases were more than double last year. Dealers' reports indicated that only one half of the new models replaced existing sets which would mean an increase of nearly five million in the potential radio audience. On this basis, the year closed with an estimated forty-six million radios in America.

TOM A. BROOKS.

RADIOACTIVITY. See PHYSICS.

RADIO IN EDUCATION. THE NATIONAL ADVISORY COUNCIL ON. An organization established in 1930 to promote the more effective utilization of the art of broadcasting in the general field of American education. It was incorporated in December, 1931, and membership, which is open to those interested in the development of educational broadcasting, is active and associate. Active membership is limited, but associate is unlimited. Funds for the basic administration and maintenance of the organization, for a minimum period of three years, were provided by John D. Rockefeller, Jr., and by the Carnegie Corporation of New York. The Council is now maintained by a grant from the Carnegie Corporation.

Pending broadcasting developments in Washington and a clearing of the European situation, the Council has ceased active work it formerly conducted and is devoting its resources to research in connection with various agencies. Bulletins and publications relating to the Council's work and kindred subjects are issued at intervals.

The officers in 1939 were: President, Robert A. Millikan; vice-presidents, Livingston Farrand, Robert M. Hutchins, Meta Glass, Walter Dill Scott, Robert G. Sproul; treasurer, William J. Donovan; secretary, Levering Tyson. Headquarters are at 60 East 42d St., New York City.

RADIO PROGRAMS. Never since the advent of public broadcasting in 1920 did the micro-

phone so feverishly leap back and forth across the sea as in 1939. It was the long wavelengths of wireless that swooped across the Atlantic with the war story of 1914-18. Out of it all came the talkative radiophone heralded as an instrument for the good of all mankind. Here was a device to reach into the home, not with dots and dashes, but in languages the masses could understand; nations could speak peace to nations.

But in 1939 short waves were skipping across the hemispheres, many of them speaking hate. Europe was at war again. America eavesdropped throughout the spring and summer on the distant rumble of Mars; it heard the thunderous crack of the "Blitzkrieg" in the autumn. Declarations of war were in the air; defiance sputtered, challenges were hurled and accepted. Censors put clamps on the microphones overseas. American broadcasters took steps to preserve their neutrality and to avoid being embroiled in the distribution of foreign propaganda.

With television and the regular routine of broadcasting "blacked out" in Europe, Uncle Sam's 800 or more broadcasters sought to get back to normal programming in the "public interest, convenience and necessity." The talk of war was left very much in the hands of the newscasters and news analysts, prominent among them Raymond Gram Swing, H. V. Kaltenborn, and Elmer Davis.

Domestically, radio in '39 is remembered for its quizzes. These public participation programs drew a crowd, because they are interesting and informative, coupled with the fact that while the listener has a chance to see how much he knows too, also he may win a prize. American listeners like to win something. And so, for broadcasts, prizes are good bait. The '39 headliner among the question marks was "Information Please" with its challenge to America to stump the erudite, four-man board of experts—Clifton Fadiman, the witty interlocutor, and John Kieran, Franklin P. Adams, Oscar Levant, and a guest.

Always far out in front in listener survey polls of the year was Edgar Bergen, the ventriloquist, and his impish pal Charlie McCarthy. With banter freshly and cleverly written, delivered with a human touch that rings with an appealing naturalness wherever it falls to earth from coast to coast, this man and dummy starred. For every month in the year, as in 1938, again the blockhead Charlie set the pace in broadcasting.

With the insatiable radio consuming jokes faster than they can be written it is no wonder that 1939 sparkled with fewer comedians than a few years back. Theirs is a most difficult task, since a pun does not withstand the onslaught of repetition as does a song. Therefore, to stay on the air from year to year and still draw laughs and high ratings in popularity polls is something to merit a bouquet. So the flowers were tossed to the ever-sharp, spontaneous Fred Allen, to Jack Benny, Bob Hope, Bob Burns, Walter O'Keefe, and to Lou Holtz for his funny storytelling on the air.

When the curtain of 1939 dropped on the "theater of the air" it left behind the memories of a number of good shows. The broadcasters have always looked upon drama as the one field in which radio might create an art form of its own, built upon sound with the scenery painted by the listener's imagination. To Orson Welles, the unforgettable Martian of '38, goes the acco-

lade for individualism in dramatic production, acting, and showmanship in '39. And among the others who may step to the footlights for a curtain call are Cecil B. DeMille for his consistently good "Theatre of the Air," abetted by a script usually ideally adapted for broadcasting and acted by Hollywood stars; to the Screen Guild for its performances; to Arch Oboler for his original radio plays; to the Columbia Workshop and to Norman Corwin for experimental broadcasts in drama; to the planners of "the Great Plays" adapted from the classics.

Dr. Walter Damrosch continued his excellent work as a teacher of music appreciation. Now he counts his audience in the millions; his is one of the few programs for which schools are willing to interrupt their routine to tune-in regularly. The "American School of the Air" expanded and brightened the invisible teachers' work through a studied use of music, drama, and storytelling that go to sugarcoat education and make it entertaining as well as informative. To further their missionary work in education the broadcasters increased their efforts to assist in the supply and distribution of follow-up material. The winged and ever-fleeting broadcast lesson is but to whet the appetite for those who listen; it is supplementary to teaching and reading. It is no substitute for school or library, teacher or book.

Classed as education are the numerous forums, roundtables, councils and all forms of free and open discussion on the air, prominent among them the "America's Town Meeting of the Air," the University of Chicago Roundtable, and "the People's Platform." Freshness of topic is their spice coupled with timeliness and authoritative or representative voices. The war gave the forums much to feed upon; along with such fat on the fire as "neutrality," "Hitlerism," "totalitarianism," "pocket battleships," and "propaganda" there was much to chat about at home: "third term," "social security," "balanced budget," "national defense," "free speech," "free press," "democracy," etc. Tongues had their innings in 1939.

With the flow of words so torrential, the broadcasters through the National Association of Broadcasters adopted a new code for self-regulation of the industry, based on freedom of speech, impartiality, and fairness. Important among the new rules is the provision banning the selling of time on sponsored programs for broadcasting controversial subjects. Time for such topics would be free, and free to both sides of the question so that no one with the largest fund might buy up more time and watts than the opposition which might have a smaller treasury. Equality is the keynote.

Musically and classically, the NBC Symphony Orchestra led by Arturo Toscanini and guest conductors; the New York Philharmonic-Symphony directed by John Barbirolli; the symphonic concerts under Alfred Wallenstein's baton, that of Howard Barlow and the Sunday evening concerts microphoned in Detroit, also the Metropolitan Opera Saturday matinees, topped the list.

In the popular or semi-popular music classification the honors went to Andre Kostelanetz for his fine band and novel arrangements; to Benny Goodman for his entrancement of the jitterbugs. Deems Taylor leads as music narrator; the "Beer Barrel Polka" and "Deep Purple" will probably be remembered as the year's hit songs.

Radio has its vaudeville shows. After a ten-year run the "Vallee Varieties" staged its finale

in '39. As 1940 opened, the badges of merit in variety for 1939 were worn by Bing Crosby, Kate Smith, and by Major Bowes for his amateur hour. In what radio programmers catalogue as "human interest" are such shows as "Vox Pop" and "We, the People." They were headliners under that heading in 1939.

Telecasting on a regular program basis got under way when the Fair opened. Since then marked progress has been observed, both scientifically and artistically, but economically 1939 left television still an enigma. Prize fights, wrestling, football, and baseball were telecast with remarkable clarity, almost binocular-like in results. There were probably about 1000 tele-radios in the New York area at the year end. Lower price receivers, more and better programs, and wider distribution of the pictures are the tonics needed. And while on the subject of telepictures it is worthy of mention that a number of experimental ultra-short wave facsimile stations printed miniature newspapers.

Industrially, radio reached a new peak with 9,000,000 new sets produced, including about 600,000 phonograph combinations; the record business boomed. Gross income for the broadcasting industry was approximately \$170,000,000. See ADVERTISING; BROADCASTING STATIONS; TELEVISION.

ORRIN E. DUNLAP, JR.

RAILROAD RETIREMENT BOARD.

See RAILWAYS.

RAILWAYS. For the men actually in charge of the operation and maintenance of the railways of the United States 1939 was a year of bewilderment. It had been upsetting when they had been told to put quality of service ahead of economy, but that had been a private ambition of many of them. The loss of their power to discharge men, arbitrarily, had been like the loss of a leg, disabling but understandable; but when they were blamed for improving service while failing to show interest earned they felt that they were in a nightmare world.

In the years since 1932 there have been huge government loans to railway companies and labor in general has benefited, but it was not until 1939 that railway employees began to receive direct aid from the Federal government.

Railroad Retirement Board. On July 1, 1939, contributions and benefits under the Railroad Unemployment Insurance Act went into effect. This is one of the three acts that are administered by the Railroad Retirement Board. The other two acts deal with a retirement system under which employees who leave railroad service either because of age or disability receive annuities. The board in 1939 consisted of Murray W. Latimer (chairman), M. R. Reed, and Lee M. Eddy.

In general the acts cover Class I, II, and III railroads, express companies, the Pullman Co., switching companies, electric railroads, car loan companies, railroad associations, and railroad labor organizations. They do not cover motor carriers. The latest comprehensive figures available are the Board's estimates for the first quarter of 1938. They show that the acts cover a total of 1,399,230 employees, of which 1,210,740 are railway employees.

Funds to make retirement annuity payments are provided by taxes on both employers and workers. These taxes were thus summarized by Chairman Latimer:

Employers must pay an excise tax levied upon pay rolls and employees must pay an income tax based upon the wages received. The tax begins at 2½ per cent in 1937 for both employers and employees and continues at that rate for three years. For the next three years, beginning with 1940 the tax is to be increased to 3 per cent. It gradually increases until by 1949 both workers and employers will pay 3½ per cent.

The amount of the annuity payable under the retirement system is arrived at by a calculation that has to be complex enough to cover widely varying conditions but a clear conception of it may be had from some of the examples that Mr. Latimer gives.

A man whose average wage has been \$50 a month and who retires after five years' service receives \$5 a month. A man with an average monthly wage of \$50 who retires after 30 years' service receives \$40 a month.

A man whose average wage has been \$100 a month and who retires after five years' service will receive \$8.75 a month while the man with the same average wage who retires after 30 years will receive \$52.50 a month.

A man with \$300 a month average wage retiring after five years' service receives \$20 a month or after 30 years' service receives \$120 a month.

Minimum annuity payments of \$40 a month are specified for workers with 20 years of service who averaged \$50 or more a month and who are employees at the age of 65.

Funds are provided for unemployment insurance by "contributions" collected by the board from employers at the rate of 3 per cent of wages payable to any employee.

Benefits are payable to employees for each day of unemployment in excess of seven days during any period of 15 consecutive days.

The amount payable is based on wages received during the preceding calendar year if the "benefit" year begins in the second half of the year and on the next to the last calendar year if the "benefit" year begins in the first half of the year.

If the total compensation during the base year has been \$150 the daily payment will be \$1.75 with a total maximum payment during the benefit year of \$140.

If the total compensation during the base year has been \$1300 or over the daily benefit payment will be \$3 and the maximum amount paid during the benefit year will be \$240.

In the July 6, 1939, weekly review of the Retirement Board the total appropriations and interest on investments to date was shown as \$266,427,123 and total payments to June 30, 1939, as \$194,440,151, leaving a balance of \$71,986,972 of which \$67,200,000 was invested in 3 per cent special Treasury notes.

Federal tax collections from carriers and their employees from the beginnings of operations of the Railroad Retirement Board to the end of

	1939 millions	1938 millions
Revenues		
Freight revenues	\$3,260	\$2,858
Passenger revenue	422	406
Mail revenue	99	96
Express revenue	54	48
All other	175	157
Total	\$4,010	\$3,565
Expenses		
Maintenance of way expenses	\$ 473	\$ 420
Maintenance of equipment	764	677
Traffic expenses	106	103
Transportation	1,421	1,361
General and other	161	161
Total	\$2,925	\$2,722

October, 1939, was \$289,352,190. Total payments from the beginning of operations through October, 1939, amounted to \$152,623,000 on employee annuities, \$72,604,000 on pensions, \$1,474,000 on survivor annuities, \$1,585,000 on death benefit annuities, and \$1,972,000 on lump sum death benefits. A total of \$230,258,000.

Financial Results. The total operating revenues of Class 1 railways, those earning a million dollars a year or over, were \$4,010,000,000 in 1939 as compared with \$3,565,000,000 in 1938. Total operating expenses were \$2,925,000,000. Taxes were \$365,000,000 in 1939 and \$341,000,000 in 1938. Net operating income was \$590,000,000; \$373,000,000 in 1938. After fixed charges there was left for the stock in 1939 a profit of \$85,000,000 as against a deficit of \$123,000,000 in 1938. The break up of revenues and expenses is shown in the table on page 662.

Dividend Changes. All of the few dividend changes that took place in the year were upwards.

The Pennsylvania Railroad increased its dividend from 50 cents to one dollar per \$50 share.

The Louisville and Nashville paid \$5 on its common stock as compared with \$4 in 1938.

The Virginia Railway in 1939 declared a special dividend of \$4 on its common stock.

The Norfolk and Western, of which the Pennsylvania Railroad is the largest stockholder, declared, in November, an extra dividend of \$5 on its common stock which was in addition to the regular dividends of \$2.50 paid quarterly on that stock.

The Chesapeake and Ohio increased the rate paid on the common from 8 per cent to 10 per cent and in addition paid an extra dividend on the common of 50 cents. The par value of the common is \$25.

The Atlantic Coast Line resumed the payment of its preferred dividend which had not been paid for a year.

The Cincinnati, New Orleans, and Texas Pacific in effect raised its dividend rate on the common stock from \$10 to \$20. The method was to split up \$100 shares paying \$10 each in to 20 shares paying \$4 each.

The Pittsburgh and Lake Erie, one of the New York Central Lines, paid \$3.50 in 1939 as compared with \$1.75 in 1938.

The Wheeling and Lake Erie declared a \$4 dividend on its common in 1939 comparing with nothing declared in 1938.

The Alabama Great Southern paid \$8 each on its preferred and ordinary stocks in 1939, as compared with \$6 paid on each in 1938.

Receiverships. There were three railways, with a total mileage of 733, total funded debt of \$50,392,000, and total stock of \$28,466,800, that went into receivership in 1939. This compares with nine railways with 6194 miles, having a total funded debt of \$367,840,469 and stock of \$293,157,200 that went into receivership in 1938. Only one of the three that went into receivership in 1939 was of any importance. That was the Central of New Jersey with a mileage of 710, funded debt of \$49,531,000 and \$27,436,800 stock. The receivership followed a dispute over taxes levied by the State of New Jersey.

Traffic. Freight traffic measured in ton miles increased in 1939 by 15 per cent as compared with 1938, and passenger traffic measured in passenger miles increased 6 per cent. The total ton mileage carried by the railways in 1939 was 332,500,000,000, as against 290,084,000,000 in the previous year, and total passenger mileage was 22,900,000,000 as against 21,629,000,000.

Employees. The average number of employees on railways in 1939 was 989,000, comparing with 939,505 in 1938. The average pay was \$1878 for the year 1939 and \$1859 in 1938.

Equipment Owned. On Oct. 31, 1939 the total number of freight cars owned was 1,651,160 and on the same day in the previous year was 1,698,646. The total number of locomotives owned on Oct. 31, 1939, was 42,197, and exactly a year earlier was 43,402. There were 20,085 freight cars installed during the first 11 months of 1939 and there were 94 steam locomotives and 216 electric and Diesel locomotives installed during those 11 months.

Equipment Ordered. In 1939 there were 375 locomotives ordered for use in the United States, against 228 ordered in 1938. There were 54,439 freight cars ordered for use in the United States in 1939, as against 16,539 ordered in 1938. There were 325 passenger train cars ordered for use in the United States in 1939, compared with 269 ordered in 1938.

New Construction and Lines Abandoned. Fifty-eight miles of new railway were completed in the United States in 1939 comparing with 38 completed in 1938 and with 13,081 in 1887, the year in which the largest number of miles of railway was built in the history of the United States. But during 1939, 1783 miles of railway were abandoned, comparing with 1897 abandoned in 1938 and with 1995 abandoned in 1934, the peak year to date. Of the new construction the longest line was 33.14 miles on the Union Pacific from Nevens to Lewellen, Neb. Of the railway abandoned the longest single line was from Guthrie to McCurtain, Okla., 176 miles.

Passenger Trains and Service. Passenger service has never been as directly profitable to railway companies per dollar of outlay as has freight service, but there has always been an indirect gain—advertising—that induced railway executives to sanction outlays where the rate of profit would be small. Of late years there has been another incentive for the improvement of passenger service. J. L. Reven, president of the Illinois Central, in an address on Oct. 12, 1939, stated in words what has been at the back of many railway executives' minds, when he said that improvement of passenger service was insurance against government ownership of railways. This gives an understandable explanation of expenditures made during a period when net revenue often failed to meet fixed charges.

Improvement of passenger service has taken the form of putting into operation fast, light-weight trains, popularly called "streamline" trains. Of the 38 streamline trains listed as being in service in October, 1939, by *Railway Age* 10 were put in operation in 1939. Of these two went into service between Chicago and St. Paul, two went into service between Chicago and San Francisco, two between Chicago and Denver, one between New York and Chicago, one between New York and Florida, one in service between St. Louis and Kansas City, and one between Jackson, Miss. and New Orleans.

Below is a comparison of one of the earliest streamline trains put in operation, one put in

	Burlington Pioneer	Burlington General Pershing	Union Pacific City of San Francisco
Weight of train	302,800 lb.	609,820 lb.	2,545,496 lb.
Consists	4 cars	4 cars	17 cars
Between	Omaha-Kansas City	St. Louis-Kansas City	Chicago-San Francisco
Date put in operation	1934	1939	1936
Daily mileage	500	978	22,600 per month
Average overall speed	47 m.p.h.	55.8 m.p.h.	56.8 m.p.h.
On time percentage	93.8	95.2	95.3
Average passenger per train	43		132
Revenue per train mile	\$1.09		\$3.72

operation by the same railway company in 1939 and one of the longest distance streamline trains. This third one was put in service in 1936.

Reduction in train weight per passenger, while

an insurance against bankruptcy rather than an insurance against government ownership, has been achieved. Thus compare the Chicago, Burlington, and Quincy's *General Pershing*; a similar train of four coaches with a steam locomotive would weigh approximately 714,000 lb., and one of four Pullman cars and a steam locomotive would weigh about 960,000 lb., while the *Pershing* weighs but 610,000 lb.

The overall speed as used in the table means the figure arrived at by dividing the distance by the time consumed from the moment of departure to the moment of arriving at destination. No allowance is made for time out for stops. This method of reckoning train speed is now being used in England. An impression of what is being done in England may be had from two examples: From London to Leicester is 91.1 miles and the average speed in 1914 was 53.6 miles per hour; in 1939 it was 58.3 m.p.h. The distance from London to Liverpool is 193.7 miles and the average speed in 1914 was 48.2 m.p.h.; in 1939 it was 54.1 m.p.h.

Collection and Delivery Service. A Collection and Delivery Service is being tried out by the South Australian Government Railways. In this service they are using 16 motor trucks and 10 Morris delivery vans in service every day except Sunday from 7:30 a.m. to 6 p.m., and making an average monthly mileage of 6000 miles. Each truck has a capacity of about 1 ton and hauls a 4 ton trailer. They collect and deliver all classes of freight for which they have capacity to any addresses in Adelaide and its suburbs. The vans deliver and collect parcels and baggage. The public are said to find the service satisfactory and the railway finds it useful for advertising purposes. Being a government operation cost figures are not available.

The Argentine Government gave the railways of that country permission, in 1939, to supplement rail service with motor or horse drawn collection and delivery of baggage and freight to or from points "within the zone of influence of the company concerned." It is provided that a railway company may not establish such service to points served by or "within the zone of influence" of another railway company.

England. Co-ordination of railway and road transport in England was covered in a report made in April, 1939, by the Transport Advisory Council. The setting up of a consultative committee to be called the Road and Rail Central Conference (having the power of appointing regional committees) is being recommended. Railway companies, shippers, and road transport agencies may present to this conference rules covering rates and services and the findings of the conference would be legally enforceable, but it is specifically pointed out that the success of co-ordination will depend on the spirit with which it is undertaken, and to show this the Council recommends relaxation of statutory rate control. It is implied that legal enforcement is only a means of obtaining uniformity. Throughout the discussions of the Council and throughout its findings the reliance on getting together as a means of protecting present investment while securing the benefits of new forms of transportation is noteworthy.

The *Coronation Scot*, a train built for the London, Midland, and Scottish Railway of England, was sent first on a tour of the United States and then put on exhibit at the 1939 World's Fair at New York as an example of the best of English

passenger trains. It consists of a locomotive and eight cars. The locomotive weighs 164½ tons (English) and the eight cars 262½ tons. One of the cars in the exhibition train was a sleeping car, though this car will not be in the train on its regular run between London and Glasgow. Seating accommodation in the exhibition train was 173, but will be more, it is said, in regular service. High tensile steel was largely used to reduce the weight. As a departure from English practice heretofore the wheel base of the cars is articulated and there are three trucks instead of four per pair of coaches. Two luxury features, new to English railway trains, are added—a cocktail lounge and a club saloon car. The kitchen-car range burns solid smokeless fuel, with a boiler of black enamel and chromium plate. The locomotive is streamlined and of the 4-6-2 type. The overall length of the locomotive with tender is 79 ft. 9¾ in.

Two luxury, air-conditioned trains of steel cars were being built in Birmingham, Eng., in 1939 for the South African Railways to run between Cape Town and Johannesburg.

Italy. The Italian railways have succeeded in greatly reducing the time consumed between terminals in recent years. For instance, the run between Rome and Naples which took 4 hours in 1914 was made in 1 hour and 59 minutes in 1939. The railway distance in 1914 was 154¾ miles and in 1939 was 130½ miles. The fastest schedule run in February, 1939, was that between Milan and Bologna, 136.1 miles, where the overall rate was 72.3 m.p.h. The train making this fast run is for first class passengers only. The run between Florence and Bologna passing through the 11½-mile Apennine tunnel has an average speed of 69.4 m.p.h. The *Railway Gazette* of London says that for a run of 500 miles or over the Italian railway train between Naples and Milan, 523 miles, making an average speed of 65.4 m.p.h. is the fastest train in Europe.

Germany. The German railways in connection with the Italian railways have put on a train that makes the run from Berlin to Milan, a distance of 720 miles, in 15 hours, an overall speed of 48 m.p.h.

From such news dispatches as have come past the censors it is likely that accidents on German railways during 1939 have been many and serious. (See CHRONOLOGY.) Since German and Polish railways are standard gauge and Russian railways broad gauge it has been impossible, news dispatches say, to transport to Germany any large part of the supplies that Russia can spare.

France. The French National Railways during 1939 made various speed tests, the most noteworthy of which was a short run of an electric locomotive hauling four cars and making a speed of 112 m.p.h.; but this was not in regular service and is rather an indication of what may be attempted in the future than an example of what is being done now. The non-stop run from Paris to St. Pierre-des-Corps, 145.9 miles in 141 minutes, is included in the regular run to Bordeaux, a total of 362.4 miles in an overall speed of 64.1 m.p.h. This schedule is now in force, but in general the trend in France in 1939 was to discontinue the very fast trains, as a means of retrenchment. For example the train making the run from Paris to Lyons in 5 hours and 5 minutes was taken off and the running time is now 6 hours and 38 minutes.

Belgium. The Belgian National Railways put

in service in July a train hauled by a steam locomotive (4-4-2 type) between Brussels and Ostend, 70.8 miles, which makes the run in one hour.

Russia. Russian railway development figures are not up to date, but it is possible to give an idea of the progress that has been made in the last five years. The Far Eastern section of the Trans-Siberian Railway has been double-tracked and various cut-offs have been built. This was considered a military measure rather than an economic one. During five years 200 miles of new route have been opened within Russia, though 6800 miles were planned. There were 3100 miles double-tracked, comparing with 6000 miles planned. Six hundred and fifty miles were converted to electric traction as against 3000 miles planned.

During these five years freight traffic over the main trunk lines has increased 500 per cent; the number of freight cars has increased 160 per cent during this period, and 4200 locomotives were built. The standard freight locomotive is the 2-10-2 type. The ratio of freight locomotives built to passenger locomotives has been 5 to 1. The average locomotive mileage per day has increased from 260 km. to 270 km. (161½ m. to 167½ m.).

Denmark. In Denmark an experiment is being made with two moving-picture, talkie, cars. The seating capacity is 54 and the former lavatory is being used as an operator's room, with a second room built in for the speaker. The cars are being used in connection with excursion trains and also to give instruction to employees.

Diesel-Electric Locomotives. As of Apr. 1, 1939, there were 92 Diesel locomotives on order for 21 railway companies in the United States and experiments were being made in many foreign countries in the use of Diesels for motive power. L. K. Sillcox, Vice President of the New York Air Brake Co., presented a paper at Yale on March 8 comparing the cost and performance of steam and Diesel-Electrics in which he concluded: "It seems unreasonable to expect the Diesel to displace the steam locomotive in road freight and passenger service as it has in the performance of yard work, yet it will, unless steam can attain full stature to meet the work to be done." Mr. Sillcox paper began with the statement that: "Seventeen barrels of oil in a Diesel-Electric locomotive will haul a high speed, de luxe train at 80 m.p.h., non stop, from New York to Boston. Sixteen barrels of fuel oil, fed into the firebox of the steam locomotive will scarcely move the same 12 heavy cars as far as Bridgeport, Conn., eastbound. There is a 4.5 to 1 advantage shown in favor of the Diesel."

The consensus among railway operating men seems to be that the Diesel fitted in with the steam locomotive may be an important factor in conserving the great bulk of the present investment in railways. This is founded on the belief that main-line long haul of both freight and passengers is now being done by steam locomotives economically enough to pay a fair return on the investment if only operations essential to the main line haul can be performed in a more economical manner than that in use heretofore.

Switching is one of the essentials. The Diesel-Electrics in operation in 1939 indicated that the cost of switching could be greatly reduced. For instance the General American Transportation Corporation has placed in operation two 44-ton Diesel-mechanical switchers, known as Flexomo-

tives, in its Chicago and Sharon, Pa., plants which are expected to show an increased return on the investment of 50 per cent as compared with the cost of former steam operation. They have shown ability to handle trains of as many as 66 large empty hoppers in one test.

If the economies to be effected by the use of Diesel engines were to be confined to switching service they would be but a minor factor in the salvaging of the huge investment in the fixed plant of steam railways, but there are many other functions that the Diesel can take over from the steam locomotive which, in regard to freight, come under the head of feeder and distribution, and in passenger service come under the head of local runs and short line operation. Rapid acceleration is of great importance in this class of passenger business.

The following figures given by Mr. Sillcox in the paper presented at Yale are suggestive.

	Steam	Diesel
First cost.....	\$41,000	\$70,000
Cost per hour of operation		
Fuel (cents).....	82	29.6
Repairs (cents).....	72.5	53.5
Enginehouse expense (cents).....	50.5	1.6
Total including wages.....	\$3 620	\$1.542½
Maximum force at starting (lb.)....	34,000	66,000

See articles on the various countries under *Transportation*; *ELECTRICAL TRANSPORTATION*; *INTERSTATE COMMERCE COMMISSION*; *COLORADO*; *MASSACHUSETTS*; *NEVADA*.

WILLIAM E. HOOPER.

Accidents. Casualties on steam railroads in connection with the operation of trains in the United States during the calendar year 1938, as reported by the Interstate Commerce Commission, resulted in the death of 4289 persons as compared with 5118 in 1937, and in the injury of 15,502 persons, as against 20,149 in 1937. The following table shows the class of persons killed or injured.

Class of persons	Persons killed	Persons injured
Trespassers	2,229	2,094
Employees	386	6,481
Passengers on trains	69	2,272
Travelers not on trains	9	66
Persons carried under contract	1,590	251
Other nontravellers	1,590	4,338
Total	4,289	15,502

In addition there were 210 persons killed and 11,751 injured in nontrain accidents, in comparison with 232 killed and 16,543 injured in such accidents during the preceding calendar year.

Steam railroads carried 452,999,000 passengers 21,633,138,000 miles; there were 69 fatalities to passengers on trains, or an average of 1 for each 313,523,739 miles traveled.

There were 6 employees killed and 244 injured in coupling or uncoupling locomotives and cars, as compared with 22 killed and 376 injured during 1937. Eighteen employees on duty were killed and 123 injured from coming into contact with fixed structures, and 23 employees on duty were killed and 1363 injured in getting on or off cars and locomotives. Seventy-five passengers on trains and travelers not on trains were killed, as compared with 27 killed during the preceding year. Of these 75 fatalities, 9 resulted from collisions and 43 from derailment of trains; 17 passengers on trains and

6 travelers not on trains were killed when getting on or off cars, being struck or run over, or in other miscellaneous ways. A total of 355 employees on duty were killed in train and train-service accidents, as compared with 516 during the preceding year. During the first 6 months of 1939, 6 passengers, 3 travelers not on trains, and 237 employees on duty were killed in railroad accidents.

For an account of the major accidents during 1939 see CHRONOLOGY.

RANDOLPH-MACON WOMAN'S COLLEGE. An institution for the higher education of women in Lynchburg, Va., under the auspices of the Methodist Church, founded in 1893. The enrollment for the autumn of 1939 was 665. The faculty numbered 71. The endowment amounted to \$1,246,130, while the income for the year was \$534,968. The library contains 50,045 volumes. The new curriculum was adopted in 1938 and provisions made for majors in music and art and general examinations in 1939. President, Theodore H. Jack, Ph.D., LL.D., Litt.D.

RAPA ISLANDS. See OCEANIA, FRENCH ESTABLISHMENTS IN.

RAPID TRANSIT. With the 6th Avenue subway in New York City practically completed, interest in subway building has shifted to Chicago where the first shaft for the new 7½ mile subway system in the business district was started late in 1938. This was an auxiliary shaft 26 ft. in diameter near Chicago Avenue and Lake Street. The work has gone forward during the year and has included both excavation in the heavy clay which underlies Chicago and the sinking of tunnel caissons for the river crossings. Some difficulty has been encountered due to the settlement of adjoining buildings and it seems probable that progress will not be as rapid as expected.

The demolition of the old (60 years) elevated railroad on 6th Avenue, New York City, over the line of the new subway, has opened up a new and wide avenue that had been almost lost under the old "El." It has also made many wonder why the expense of supporting this structure during the construction of the subway could not have been avoided.

See ELECTRICAL TRANSPORTATION; MUNICIPAL OWNERSHIP; NEW YORK CITY.

JAMES K. FINCH.

RATTI, ACHILLE AMBROGIO DAMIANO. See PIUS XI.

RAYON. The precaution that has come to us from the ancients, "Do not refine fine gold," is subject to exceptions. In the case of rayon every effort had been made by the skilled chemists of the world to improve the textile strength and the qualities of the various types of yarn, whether by viscose, cuprammonium, or acetate process. With the dawn of 1939, it was thought that rayon had taken its place with cotton, silk, wool, and flax, as a "constant"—something that the textile world could depend upon as performing just so under all circumstances.

But rayon is not to be denied its further period of expansion. Almost with the opening of the new year came the statement by DuPont of their discovery of "nylon," a textile produced from a mineral base—coal oil. This new fiber was reported to possess remarkable qualities of elasticity and was heralded as a direct competitor to silk in the hosiery industry. The DuPonts backed their faith in nylon by beginning construction of

a ten-million-pound unit, and before the middle of the summer announced the expansion of the plant by a duplicate ten-million-pound unit.

Other expansions in the rayon industry during the year have called for the installation of equipment for the production of a total of ninety million pounds of rayon staple fiber and the increased poundage of filament rayon from 285-million-pound capacity for 1938 to 325-million pounds for 1939.

More remarkable than anything else in connection with the development of the industry has been the increase in the demand for the finer multi-filament yarns and there are now demands in the textile trade for 100-filament, 100-denier yarns and commercial production of 50-filament, 50-denier yarns. These yarns are available for hosiery and for fine knitting purposes and constitute a further extension into the field heretofore held exclusively by silk.

There has been nothing in the career of rayon from its inception that depended upon European sources of supply for either the raw materials in the form of spruce pulp or cotton linters, or any of the chemicals necessary for the conversion of pulp and linter into filament or staple fiber. So, the war conditions abroad, both in Asia and in Europe, have no adverse bearing upon the operation of the rayon industry in the United States of America. One of the advantages to the industry, as it is now constituted, is that the diversion of other fibers to the war requirements of all of the belligerents and the neutral countries abroad, intensifies the demand for rayon in our own market.

A careful analysis of the use of rayon for the past 12 months shows that something in the neighborhood of 37 per cent was used in connection with cotton, 27 per cent constituted fabrics of all-rayon construction, that silk and rayon combination fabrics represented close to 30 per cent, and that the remaining 6 per cent was used in connection with the woolen industry, chiefly in wearing apparel.

Installed capacity of American rayon plants at the close of 1939 was 420,000,000 lb. of yarn; 65,000,000 lb. of rayon staple fiber. The industry was operating at the close of December at a capacity of 375,000,000 lb. of yarn and 55,000,000 lb. of rayon staple fiber.

A definite expansion program is under way that will raise installed capacity of yarns by July, 1940, to 440,000,000 lb. and rayon staple fiber up to 130,000,000 lb.

The price range for the year on 150-denier, 24-filament, viscose rayon, which is the standard for estimating price movements, was held between 50 and 55 cents in January, and bookings closed for December on the basis of from 52 to 55 cents. This is in startling contrast to the rapid advances on wool and silk, as well as the erratic movements on cotton. Again in 1939 rayon established the fact that its adequate production in this country and its stability of price make it an indispensable fiber.

FRANCIS A. ADAMS.

REALISM. See PHILOSOPHY.

RECIPROCAL TRADE AGREEMENTS.

See TRADE AGREEMENTS, RECIPROCAL.

RECLAMATION, BUREAU OF. The Bureau of Reclamation, a bureau of the Department of the Interior of the United States Government, was created by an Act of Congress, June 17, 1902,

for the purpose of survey, examination, construction, and operation of works for the reclamation by irrigation of arid and semiarid lands in the western states. It is engaged in the construction, operation, or supervision of the operation of 63 irrigation projects or divisions of projects in 15 arid and semiarid states of the Far West, comprising a total irrigated area of more than 3,000,000 acres. The funds for this work have come from repayments by the water users, from oil leasing and other mineral operations, from the sale of public lands, and by allotments and direct appropriations by the Congress. The money expended is returned to the United States Treasury for deposit in the Reclamation Revolving Fund by payments of settlers and from sales of power and water.

The construction program of the Bureau of Reclamation during the fiscal year ending June 30, 1939, was the largest in its history. Work was in progress on 30 projects in 12 states. Since the Bureau was organized in 1902, construction results include 20,101.4 miles of canals, ditches, and drains, 156 storage and diversion dams with an aggregated volume of 52,807,194 cu. yd., 48 power houses, 2812 buildings, 81.8 miles of tunnels, 4661.6 miles of telephone lines, 20,597 culverts, 13,738 bridges, 2918.1 miles of road, 172.1 miles of railroad, 4635.1 miles of transmission lines, and 198,521 other irrigation structures. Reservoir capacity created by this construction has totaled 47,121,170 acre-feet. This work has involved the excavation of 520,485,130 cu. yd. of materials, and the Bureau has used 22,659,681 bbl. of cement.

An outstanding project under construction is the Grand Coulee Dam on the Columbia River in Washington, which, upon completion, will be the most massive masonry structure in the world, and with a maximum height of 553 feet, it will be the third highest concrete dam. The second major contract for completion of the dam, left power house, and foundation for the pumping plant, awarded late in the previous fiscal year, was in progress and was about 38 per cent completed at the end of the fiscal year. Ultimately the project will irrigate 1,200,000 acres of land.

Another major undertaking of the Bureau in progress is the Central Valley project in California, designed to alleviate critical water shortage and problems in important agricultural areas through the conservation of waste flood waters of the Sacramento and San Joaquin Rivers. At the end of the fiscal year construction work was about 25 per cent complete on Shasta Dam, to be 560 feet in height, 3500 feet in length along the crest, and to contain a volume of 5,610,000 cu. yd. of concrete, the second highest and most massive concrete structure in the world. The work in progress also includes the 46-mile Contra Costa Canal, the Southern Pacific Railroad relocation around Shasta Dam reservoir site and the Friant Dam.

The principal work at Boulder Dam, the highest dam in the world, located on the Colorado River in Arizona and Nevada, consisted of the erection of machinery and the installation of electrical equipment. With the eighth large generator going into operation in August, 1939, the present installation includes six of the large 82,500-kilowatt generators in the Nevada wing and two of the large and one of the smaller 40,000 kw generators in operation in the Arizona wing, totaling 700,000 kw. Ultimately there will be 15 of the large and two of the small generating units

in operation with a capacity of 1,317,500 kw. Present power contracts will not only return the cost of Boulder Dam and Power Plant to the Federal Government with interest in fifty years but will also pay certain revenues to the States of Arizona and Nevada.

The 80-mile All-American Canal now virtually completed and its 130-mile Coachella branch will ultimately bring to fruitfulness approximately 1,000,000 acres of land in the Imperial and Coachella Valleys of Southern California.

At the end of the fiscal year over 900,000 persons were living on the 52,552 farms irrigated by the Bureau and in the 258 towns and cities served by Federal projects. Of the 3,106,699 acres irrigated, 3,040,695 acres were harvested in 1938, producing crops worth \$113,463,460, or an average of \$37.31 per acre.

Projects now being constructed by the Bureau will add approximately 2,300,000 acres to the cultivated area of the arid and semiarid states. In addition, supplemental water will be provided for about 1,700,000 more acres which now have insufficient water to produce good crops. When completed, it is estimated that these new projects will provide opportunities for a total of 825,000 people on farms and in cities and towns as yet unlocated.

JOHN C. PAGE.

RECONSTRUCTED GLASS. See GLASS. RECONSTRUCTION FINANCE CORPORATION. The Reconstruction Finance Corporation, one of ten agencies grouped under the Federal Loan Agency, may perform all its functions to the close of June 30, 1941, or such earlier date as the President may authorize. The Corporation was created by Act of Congress approved Jan. 22, 1932, to provide emergency financing facilities for financial institutions, to aid in financing agriculture, commerce, and industry, and for other purposes. Legislation subsequently enacted by the Congress increased its powers and extended its operations, or otherwise affected the Corporation. The Corporation was organized and began its operations on Feb. 2, 1932.

The management of the Corporation is vested in a board of directors consisting of five persons appointed by the President by and with the advice and consent of the Senate. The Corporation functions through a principal office at Washington; special representatives in Salt Lake City, Utah, and San Juan, P. R.; and loan agencies located in the following cities:

Atlanta, Ga.
Birmingham, Ala.
Boston, Mass.
Charlotte, N. C.
Chicago, Ill.
Cleveland, Ohio
Dallas, Tex.
Denver, Colo.
Detroit, Mich.
Helena, Mont.
Houston, Tex.
Jacksonville, Fla.
Kansas City, Mo.
Little Rock, Ark.
Los Angeles, Calif.

Louisville, Ky.
Minneapolis, Minn.
Nashville, Tenn.
New Orleans, La.
New York, N. Y.
Oklahoma City, Okla.
Omaha, Nebr.
Philadelphia, Pa.
Portland, Oreg.
Richmond, Va.
St. Louis, Mo.
San Antonio, Tex.
San Francisco, Calif.
Seattle, Wash.
Spokane, Wash.

Federal Reserve bank act as depositories, custodians, and fiscal agents for the Corporation. The Insular Treasurer acts as custodian for the Corporation at San Juan, P. R. Funds of the Corporation are kept on deposit with the Treasurer of the United States.

The capital stock of the Corporation is \$500,-

000,000 fully subscribed and paid in by the Secretary of the Treasury and held for the benefit of the United States.

The functions of the Corporation include loans to—financial institutions, insurance companies, and railroads, business enterprises and public agencies; drainage, levee, irrigation, and similar districts; and political subdivisions; mining and fishing industries; public school districts or other public school authorities; repair of damage caused by floods or other catastrophes; Administrator of Rural Electrification Administration; loans for carrying and orderly marketing of agricultural commodities and livestock; exportation of agricultural or other products; subscriptions for and loans upon preferred stock of banks, trust companies, and purchase of capital notes or debentures of such institutions; subscriptions for preferred stock and purchases of capital notes, etc., of insurance companies, and loans secured by such stock or notes; subscriptions for or loans upon nonassessable stock and purchase of capital notes or debentures of national mortgage associations, mortgage loan companies, etc.; purchase of marketable securities from the Public Works Administration, and purchase of debentures and obligations of the Federal Deposit Insurance Corporation.

Through Dec. 31, 1939, total authorizations by the Corporation and tentative commitments outstanding at the end of the month were \$10,626,895,058. Cancellations and withdrawals were \$2,436,668,638, and \$650,830,440 remains available to borrowers and to banks in the purchase of preferred stock, capital notes, or debentures, etc. Total disbursements were \$7,539,395,980, repayments and other credits \$5,808,731,659 (over 77 per cent).

In addition to the foregoing loans and investments, the Corporation has allocated \$2,921,413,841 for relief and to other Governmental agencies by direction of Congress. Under an Act of Congress passed in February, 1938, the Secretary of the Treasury was directed to cancel notes of the Reconstruction Finance Corporation to the extent of funds outstanding in connection with allocation and relief disbursements; but no part of the notes canceled was for loans made to borrowers, or for investments made by the Corporation, and no debt due to the Government by any one was canceled. The total amount of notes canceled up to Dec. 31, 1939, was \$2,720,243,677.

After the payment of all expenses and interest on the money borrowed to lend, the Corporation has accumulated an operating surplus in excess of \$269,000,000, which it is thought will be ample to cover any and all individual losses. The operating expenses of the Corporation have been substantially less than 1 per cent of the amount disbursed.

JESSE H. JONES.

RECREATION ASSOCIATION, NATIONAL. An association organized in 1906, under the name of the Playground Association of America, for the purpose of uniting in a national movement the efforts made in various parts of the United States to provide safe and adequate areas where children might play under experienced leadership. In recent years, however, its work has expanded to include the community as a whole, a staff of field workers being maintained to assist cities in organizing year-round programmes for adults as well as for children.

The association carries on its work through such services as correspondence and consultation,

music, drama, park recreation, recreation for girls and women and for institutions, a bureau of colored work, and, in co-operation with the U.S. Department of Agriculture, a service to rural leaders. It conducts institutes for the training of recreation workers and an annual Recreation Congress, and prepares and distributes literature. Its official magazine is *Recreation*, a monthly. The officers in 1939 were: President, John H. Finley, Ph.D.; treasurer, Gustavus T. Kirby; and secretary, Howard S. Braucher. Headquarters are at 315 Fourth Avenue, New York City.

RED CROSS, AMERICAN NATIONAL. A quasi-governmental organization chartered by the Congress, January, 1905. Its chartered obligations are: "To furnish volunteer aid to the sick and wounded of armies in time of war . . . to perform all duties devolved upon a national society by each nation which had acceded to the Treaty of Geneva . . . to act in matters of voluntary relief and in accord with the military and naval authorities as a medium of communication between the people of the United States and their Army and Navy . . . to continue and carry on a system of national and international relief in time of peace and to apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other great national calamities, and to devise and carry on measures for preventing same."

Upon the outbreak of hostilities in Europe, September 1, the American Red Cross organized for war relief. In the weeks that followed, chapter volunteers started the production of garments for refugees, surgical dressings, and hospital clothing. Funds were allocated for the emergency relief of Polish refugees and an Inquiry and Information Service was set up to handle communications between this and the war zone. To meet the expenses of these operations, the Central Committee of the American Red Cross set up a fund of \$1,000,000 from reserves of the organization and from contributions received from individuals and groups throughout the country.

The American Red Cross had 3716 chapters, with 7133 chapter branches in the United States and the insular possessions on June 30, 1939.

In the 12 months preceding June 30, 1939, the American Red Cross recorded the highest annual incidence of disaster in its 58-year history. Relief operations were carried on by the organization at the scene of 217 disasters in the United States and its insular possessions. One hundred and fifty-seven disasters occurred in Continental United States, resulting in relief programs for 130,000 persons at a cost of \$2,194,779.

During the year 100,361 life saving certificates were issued, and 187,643 persons were qualified as beginners or swimmers under Red Cross supervision. Through the same period 355,110 first aid certificates—60,000 more than were issued last year—were granted to students who successfully completed the course prescribed by the Red Cross.

The problems of 150,606 disabled veterans or their families were dealt with by chapter workers. In hospitals and regional offices of the Veterans' Administration and in other Government hospitals, representatives of the national organization dealt with 54,792 ex-service men or their families. Chapters aided 10,653 men now in regular service, or their families. Red Cross field directors in Army, Navy, Coast Guard, and Marine Corps stations and workers in Government

hospitals handled the cases of 41,125 men in active service or their families.

On the active list of the Red Cross Nurses' Reserve are 44,479 nurses ready to respond to calls from Army, Navy, and Red Cross disaster service.

Public health nurses made 1,046,933 nursing visits to or on behalf of patients; inspected 595,575 school children within the 12 months. At the close of the fiscal year 674 public health nurses were employed in 494 communities.

Hygiene and home care of the sick was taught by 1826 graduate nurses. Under them 61,296 who received instruction satisfactorily completed the course and were awarded certificates. During the year, the millionth person was trained in this field.

Accomplishments of 53,115 volunteers in special services included: Production of 342,849 garments; 382,355 pages of Braille transcribed by hand for blind readers, and 507,738 pages printed by duplicating process; 18,395 Christmas bags for distantly stationed men of the Army and Navy; the making of 58,334 calls by members of motor corps; the preparation of 5,061,082 surgical dressings; the feeding of 67,777 persons by canteen workers.

Membership for the year ended June 30, 1939, was 5,668,680 men and women—an increase of 145,095 over the previous year.

The American Red Cross was active in the field of international relief. It contributed \$200,000 to the work of the International Red Cross Committee at Geneva to assist non-combatants and prisoners of war in Spain, to facilitate the exchange of news between anxious relatives and persons stranded in Spain, and to purchase food-stuffs. The Red Cross has spent a total of \$828,000 for Chinese war relief. These expenditures have been administered by the American Advisory Committee composed of representative Americans resident in Shanghai, and which has procured food and clothing for destitute Chinese civilians as well as helped establish medical and refugee units. In addition the American Red Cross helped finance the repatriation of American citizens in China. In both Spain and China the Red Cross offered assistance impartially to both factions.

The President of the United States is president of the American Red Cross. Norman H. Davis is chairman of the Central Committee, having been named by President Roosevelt on Apr. 12, 1938, to succeed the late Rear Admiral Cary T. Grayson. The Central Committee is composed of 18 members, 6 of whom are appointed by the President of the United States to represent the Government.

REED COLLEGE. A non-sectarian, coeducational college of liberal arts and sciences in Portland, Ore., established in 1911. Enrollment for the first semester, 1939-40: men, 323; women, 223; total, 546, classified as: freshmen, 152; sophomores, 155; juniors, 108; seniors, 72; graduate students, 9. Faculty, 47. Endowment assets for 1938-39, \$1,854,904; new endowment income (exclusive of gifts), \$53,234; college operating budget for 1938-39, \$190,789 (does not include Commons or Dormitory). Volumes in the library, 65,884, with 276 periodicals. A Student Union Building completed during the year. President, Dexter Merriam Keezer.

REFERENDUM. For outstanding questions made subject to referenda, see **DENMARK** and

SWITZERLAND under *History*; **CALIFORNIA**; **OHIO**.
REFORMED CHURCH IN AMERICA. A church having a government of the Presbyterian type, composed originally of settlers from the Netherlands. Headquarters, 156 Fifth Ave., New York City, N. Y. See **RELIGIOUS ORGANIZATIONS**.

REFUGEES. The year 1939, which saw the defeat of Republican Spain, the conquest of Albania, the occupation of the remnants of Czecho-Slovakia, the destruction of Poland, the war in the West, and the attack upon Finland—an exceptional year in the annals of warfare—was notable not only for the outbreak of new areas of combat, but for the terrible dislocation of large numbers of persons, hundreds of thousands of whom became homeless wanderers. The plight of the refugees, like the wars themselves, was a direct consequence of the policy of the dictators to keep the European cauldron boiling.

These transigrations were not the usual fortunes of war even when they followed in the wake of war, as in Spain and Poland. They were the desperate attempts of the marked men and women and their children somehow to escape the tyranny and vengeance of the totalitarian conquerors. By 1939 the ferocity of the Nazi and Fascist terrors as an effective means of dealing with their picked victims was so well understood throughout Europe, that whenever and wherever the turn of political events appeared to favor the dictators, a new stream of refugees was started. The flood of German refugees let loose in 1933 after the Nazis had seized power, was swelled in March, 1938, with the forcible annexation of Austria, and in March, 1939, with the occupation of Czecho-Slovakia. At first the fury of the terror in the Third Reich had been directed against the Jews as Jews and against Communists, Social Democrats, and other political persons, as well as unpolitical intellectuals and humanitarians, whose points of view ranged them in opposition to National Socialism. Later the disciplinary arm of the Reich was turned also against Catholics and Protestants who demonstrated their inability to reconcile their religious beliefs with Nazi doctrine.

Up to November, 1938, approximately 130,000 refugees had left Germany and Austria. After the Anti-Semitic pogrom of November 10 of that year pressure for Jewish and non-Aryan emigration was increased; and by October, 1939, according to the report of Sir Herbert Emerson, League of Nations High Commissioner for Refugees, some 400,000 Germans had by hook or crook left Greater Germany. Countries bordering on Germany that had allowed refugees a temporary haven, in the early months of 1939 refused admission to further numbers. Overseas quotas had been, or were rapidly being, filled and other avenues of emigration were being closed. It appeared as if no more potential refugees in Germany could find a way of escape. But once the Reich's unwanted citizens had been stripped of every possession—by decrees, flight taxes, forfeits, penalties, and plain thefts—no device to rid the country of them was too mean or inhuman to try. At the close of 1938, as a pretext of retaliation against a Polish measure affecting Germans, thousands of Polish Jews residing in Germany were rounded up without previous notice and driven penniless across the Polish frontier. During the ensuing year thousands of German Jews were forced into boats and thrust on the seas to

seek entry at ports in Cuba, South America, and Palestine. (See also *Jews*.)

The outbreak of the war between Germany and the Western Allies—Great Britain and France—further restricted the possibilities of finding permanent homes for the émigrés; while the wars in Spain, Poland, and Finland greatly increased the number of homeless. Thus during the year 1939, parts of Europe were overrun by over a million refugees: about 500,000 from Spain poured into France; some 200,000 from Poland crossed into Rumania, Hungary, and the Baltic countries; of the 400,000 that had fled from Greater Germany by October, 1939, about 140,000 remained dispersed in Europe under the necessity of re-emigrating (some 250,000 had over a period of six years found permanent homes in Palestine, the United States, Great Britain, the dominions, Latin America, and China) and just as the year closed, about 400,000 Finns, mostly women and children crossed into Norway and Sweden. This leaves out of consideration the millions uprooted by the war in China which constituted an internal problem. See *ALASKA*; *INTERGOVERNMENTAL COMMITTEE ON POLITICAL REFUGEES*.

See *BELGIUM, COLOMBIA, FRANCE, MEXICO, RUMANIA, and SPAIN* under *History*.

JAMES G. McDONALD.

REGULAR ARMY, U.S. See *MILITARY PROGRESS*.

RELIEF. The year 1939 brought a number of events of immediate, and possibly future, significance to the huge relief structure which had mushroomed into existence with the depression and had shown, by the end of 1938, little sign of contracting with the passing of the immediate emergency. The realization that the current fiscal year (1938-39) had witnessed no diminution in the country's relief bill brought about in Congress a determined and at least partially successful effort toward retrenchment, accompanied by the first serious attempt to dictate the terms under which relief funds were to be expended. A House committee inquiry into relief activities, an attempted strike on the part of disgruntled WPA workers against the government, and the co-ordination of the Federal program under two controlling agencies were other significant events of the year.

At the outset of 1939, 21,738,000 persons in the United States were receiving some type of public assistance or earnings from the Federal works program. This figure was roughly comparable to the average for 1938 and higher than any single month in 1937. These persons were receiving funds in three major categories: (1) General relief, paid from State and local funds alone; (2) the three special types of public assistance provided under the Social Security Act; i.e., assistance to dependent children, the aged, and the blind; (3) the Federal work program. During 1939, general relief payments showed a slight decline. The three special types of public assistance continued to increase, a trend which had been apparent since grants-in-aid to the States from the Federal government began in 1936. But the Federal work program decreased sharply as a result of the Work Relief Act passed in June (see below), with the result that the total number of persons receiving public assistance and earnings declined to 16,505,000 for September; for December the number had increased to 17,661. The amounts paid out were \$316,251,000 for January, \$258,248,000 for September, and \$273,452,000 for December.

The accompanying tables, compiled by the Social Security Board, gave a comprehensive picture of the relief situation in continental United States. Table 1 shows the number of recipients and Table 2 the amount they received from all types of public assistance and earnings on Federal work programs. For details of the various programs, the reader is referred to the articles on the separate agencies.

It will be noted that the tables exclude the cost of administration and materials, equipment, and other items incident to the operation of the works programs, and that they include in certain categories payments from State and local funds. The actual cost of the relief program to the Federal government is, therefore, not apparent in the tables, but it may be ascertained from the Treasury Department's reports of the amounts actually disbursed in Treasury checks for relief purposes.

The Treasury reported that between Apr. 8, 1935 (when the first Relief Act was enacted), and Dec. 31, 1939, the Federal government expended \$11,776,501,569 in relief and other such emergency funds. The funds were disbursed through 80 Federal agencies with the WPA alone handling about 63 per cent. The outlay in each fiscal year was: For the last 12 weeks of 1935, \$525,848,046; 1936, \$2,898,716,470; 1937, \$2,860,508,932; 1938, \$2,001,240,379; 1939, \$2,617,974,768; and for the first half of the fiscal year 1940, \$872,212,975. The largest amounts were expended, in the order named, for roads and streets, educational, professional and clerical projects, conservation, public buildings, and housing.

It had been optimistically predicted in many quarters that the outbreak of a war in Europe would relieve domestic unemployment and solve at one stroke the country's relief problems. Work Projects Commissioner Harrington, in a radio address of September 27, promptly discouraged any such prediction. He estimated that our unemployment of 10 millions might be reduced one-sixth or even one-fourth by the summer of 1940, but that a very large number of unemployed would remain. For a report on employment and unemployment, see *LABOR CONDITIONS and WORK PROJECTS ADMINISTRATION*.

Deficiency Appropriations for 1939. In spite of the substantial appropriations made by the 75th Congress for the fiscal year 1939, the Federal relief agencies found themselves without sufficient funds to round out the fiscal year, and the President, in his message to the 76th Congress early in 1939, called for a deficiency appropriation of \$875,000,000 for this purpose. After a bitter fight, resulting in a one-vote margin in the Senate, Congress passed a Relief Deficiency Act (February 4), which appropriated \$725,000,000 (\$150,000,000 less than the President's figure). At the same time, Congress demanded that the WPA make an investigation of its rolls and eliminate therefrom all "deadwood" and aliens. About 30,000 aliens were removed from the rolls, and 88,975 persons were found to be not actually in need of relief. Although these cuts were estimated to produce a saving of about \$23,300,000, the total rolls were not reduced.

The President requested that the \$150,000,000 cut in his relief estimate be restored in a second deficiency bill and warned that, unless the sum were enacted, relief rolls must be reduced by 400,000 in April and by 600,000 in May. When hearings on this request opened in the House Appropriations subcommittee, Representative Woodrum

TABLE 1. AMOUNT OF PUBLIC ASSISTANCE AND EARNINGS OF PERSONS EMPLOYED UNDER FEDERAL WORK PROGRAMS IN THE CONTINENTAL UNITED STATES, FROM THE SOCIAL SECURITY BULLETIN¹
[In thousands]

Year	All public assistance and earnings of persons employed under Federal work programs	Special types of public assistance ²	General Relief	Special Programs of the Federal Emergency Relief Administration	Subsistence payments certified by the Farm Security Administration	Civilian Conservation Corps	National Youth Administration	Work Projects Administration	Other Federal work and construction projects
1933 ³	\$1,358,159	\$72,414	\$758,752	\$5,753	..	\$140,736	Student aid	Projects operated by the W.P.A.	\$165,548
1934 ⁴	2,436,328	80,003	1,200,360	61,069	..	260,957	..	..	330,879
1935	2,594,764	114,663	1,433,180	114,996	\$2,541	332,851	\$6,364	\$238,018	352,151
1936	3,258,776	217,516	439,004	3,873	20,365	292,397	26,329	1,592,039	618,370
1937	2,869,379	397,865	406,881	467	35,894	245,756	24,287	1,186,266	539,299
1938	3,487,183	508,987	476,201	..	22,587	230,318	19,598	1,722,277	437,101
1939	3,494,342	565,969	481,721	..	19,050	230,513	22,644	1,508,411	557,872

¹ Figures exclude cost of administration and of materials, equipment, and other items incident to operation of work programs. Figures are partly estimated and subject to revision. ² Payments to recipients from Federal, State, and local funds in States administering the 3 special types of public assistance under the Social Security Act and from State and local funds only in States not participating under the act. ³ Totals for 1933 and 1934 also include respectively \$214,956,000 and \$503,060,000 under the Civil Works Program.

TABLE 2. RECIPIENTS OF PUBLIC ASSISTANCE AND PERSONS EMPLOYED UNDER FEDERAL WORK PROGRAMS IN THE CONTINENTAL UNITED STATES, BY MONTHS, FROM THE SOCIAL SECURITY BULLETIN¹
[In thousands]

Month	Estimated unduplicated total ²	Persons in these households	Old age assistance	Aid to dependent children	Special types of public assistance ³	Cases receiving general relief	Cases aided under special programs of the Federal Emergency Relief Administration	Cases for which subsistence payments were certified by the Farm Security Administration	National Youth Administration	Work Projects Administration	Other Federal work and construction projects
Jan. 1933	18,076	116	112	280	25	4,247	65	21 ⁴	..	..	152
Jan. 1934 ⁴	28,288	123	110	275	27	3,135	131	297	..	..	292
Jan. 1935	24,835	240	108	270	33	5,579	460	358	..	..	308
Jan. 1936	6,053	20,910	430	304	37	2,219	40	151	321	17	2,880
Jan. 1937	5,973	19,156	1,150	411	47	1,662	10	335	426	185	2,127
Jan. 1938	5,771	17,506	1,600	578	57	1,893	..	108	310	146	1,801
Jan. 1939	7,131	21,738	1,787	700	67	1,772	..	285	372	2,928	88
June 1939	6,605	19,487	1,842	748	68	1,568	..	126	295	2,436	372
Dec. 1939	6,189	17,661	1,909	760	70	1,563	..	69	280	2,436	133
								97	433	2,040	69

¹ Figures exclude administrative employees. Figures are partly estimated and subject to revision. ² Estimated by the Work Projects Administration and the Social Security Board. ³ Includes recipients of the 3 special types of public assistance in States administering these programs under the Social Security Act and recipients of similar types of assistance in States not participating under the act. ⁴ There were also 311,000 persons employed under the Civil Works Program in January, 1934. ⁵ This figure is for April of 1933.

demanding a full investigation of the WPA and a reconsideration of the government spending policies. Authority for such an inquiry was vested in the House Appropriations Committee by a House Resolution of March 27.

On March 29 the House Appropriations Committee recommended that an additional \$100,000,000 be appropriated for relief, as contrasted with the President's request for \$150,000,000. The Committee stated that its figure was "on the side of liberality" and embodied in its report some sharp criticisms of WPA administrative expenditures and choice of projects. However, it was decided not to press the economy issue until a permanent relief policy could be proposed, and the \$100,000,000 appropriation was enacted in April, the vote in the Senate being 49-28. This brought the total appropriations for the fiscal year 1939 to \$2,163,868,406, as compared with \$1,427,701,994 for 1938.

House Inquiry. The authorized inquiry was immediately undertaken. The House Appropriations Committee devoted a main part of its investigation to the Workers Alliance, an organization formed some five years before as the bargaining agent of the unemployed with the WPA. The Workers Alliance claimed in 1939 that it had from 85,000 to 150,000 dues-paying members in 45 States, in addition to many members whose dues (which range from 15 cents to a dollar a month) were waived. The organization had as its aim the maintenance of relief appropriations at a high level and claimed openly that it could secure and keep WPA jobs for its members. The investigating committee charged that the Workers Alliance controlled the relief program in urban centers and that it was in turn controlled by the Communists. Sixteen of the 25 directors were accused of being Communists; the secretary and treasurer, Herbert Benjamin, admitted that he was a Communist, and the president, David Lasser, that he had been. The investigation was responsible for certain of the measures incorporated into the Work Relief Act (see below), notably the requirement for an oath of allegiance. The Committee's inquiry shifted to the new act following its passage.

Work Relief Act. This Act, approved June 30, 1939, appropriated \$1,755,600,000 to finance the relief program for the fiscal year 1940, the various items being as follows: Work Projects Administration, \$1,477,000,000; National Youth Administration, \$100,000,000; Farm Security Administration, \$143,000,000; rural rehabilitation in Puerto Rico, \$7,000,000; Office of Indian Affairs, \$1,350,000; U.S. Employees' Compensation Commission, \$5,250,000; Office of Government Reports, \$850,000; National Resources Planning Board, \$750,000; and for administrative expenditures by various agencies, \$20,400,000. With the fight over the 1939 deficiency appropriations vividly in mind, Congress wrote into the bill a provision that the funds should be so administered as to constitute the total expended up to June 30, 1940. This limitation on the funds for the year was expected to reduce the relief rolls by about one-third. (Commissioner Harrington announced that on December 13 the rolls had been cut by more than a million during 1939.)

More significant than the sums appropriated were certain restrictions imposed in the Act on the relief program, notably the abolition of the prevailing hourly wage requirement and of wage differentials. A uniform standard of 130 hours a month was established for all WPA workers and,

wherever hours were reduced, wages were correspondingly reduced. The Commissioner of Work Projects was required to fix a monthly earning schedule which should not substantially affect the current national average labor cost per person, and this schedule was not to vary for different parts of the country to any greater extent than the cost of living varied; previously the subsistence wage had varied from \$26 in some southern States to \$56 in some northern and eastern cities. Furthermore, in the effort to prevent workers from making a career of the WPA, all persons who had been continuously employed for more than 18 months were removed and could be re-employed only after a 30-day interval and after recertification of their eligibility. The Commissioner was required periodically to investigate the rolls and eliminate persons not in actual need, and to report on the operation of the projects on the first day of each session of Congress.

Employment on work programs was forbidden to aliens, to persons refusing reasonable private employment for the time such employment would last, and to persons advocating (or belonging to organizations which advocate) overthrow of the United States government. Workers were required to take an oath to support the Constitution and were forbidden to solicit political funds. Preference in employment was given on the basis of need and, needs being equal, to veterans.

Certain limitations were also enacted as to projects. None of the funds were to be used for military or naval purposes and none for enterprises in competition with existing industries, except in the case of municipal electric plants in communities not adequately served. In the construction of buildings, Federal buildings were limited to \$50,000 and Federal contributions to other buildings to \$52,000. The Commissioner of Work Projects was authorized to allocate \$60,000,000 to other Federal agencies for the operation of projects, but non-relief persons employed thereon could not exceed 10 per cent.

The Federal Theater Project was abolished outright as of June 30, 1939, with the provision that administrative employees on the Project could be carried on the payroll for an additional month and certified relief workers for three months. The other art projects (art, music, writing, and historical records) were permitted to continue with Federal funds up to August 31. After that date, they were required to have some local sponsorship, which, beginning with 1940, must contribute 25 per cent of the cost. More than 30,000 workers had previously been employed on the art projects, some 8000 of whom were in the Theater Project. The abolition of this phase of Federal work aroused public protest from a number of organizations and leading individuals of the theater.

The Work Relief bill was rushed through Congress at a late hour on June 30, only a few hours before the beginning of the fiscal year, and the administration leaders were forced to accede to a number of provisions which they bitterly opposed. The strongest economy sentiment was apparent in the House, and the figure finally reached was \$53,000,000 below the appropriation recommended by the Senate and \$20,000,000 above that recommended by the House. The debate centered on the refusal of workers to accept private employment, communist activity in the WPA, and the abolition of the Theater Project.

The provision eliminating WPA workers who had been employed continuously for 18 months re-

sulted in the dismissal of 775,000 from the rolls in July and August. On the basis of a survey made in November, covering 138,000 of the workers dismissed, the WPA reported that only 13 per cent had obtained jobs in private industry, and that half of them were earning less than they had earned from the WPA. Of the remainder, 28 per cent were on local relief rolls, 27 per cent had been re-employed by the WPA, and 32 per cent were without support.

WPA Strike. The elimination of the prevailing wage provision under the new Work Relief Act provoked widespread opposition among WPA workers and in the ranks of labor in general, and a protest strike was initiated by WPA construction workers in a number of States on July 5. Previously, construction workers had received the WPA monthly wage, ranging in various localities from \$56 to \$94, for as little as 44 to 80 hours of work. Under the new law, they were required to work 130 hours for the same wage or, in the case of fewer hours, to receive proportionately smaller pay.

WPA Commissioner Harrington promptly stated that he had no choice but to enforce the law as enacted by Congress. Warning that the strike could not succeed, he issued an order that strikers absenting themselves from work for five days should be automatically dropped from the WPA rolls. This stand was strengthened by the announcement of certain State and local welfare commissioners that WPA workers thus dismissed would not be eligible for home relief rolls. The expiration of the five-day period was marked by a return to work in some quarters and renewed orders for strikes in others. The dismissal order proved to be more than an idle threat; by July 14, 8543 workers had been dismissed in New York City and 6864 in Illinois.

Both the A. F. of L. and the C.I.O. brought all their influence to bear in the effort to secure restoration of the prevailing wage, but neither national organization appeared willing to assume any responsibility for the strike. The C.I.O. headquarters announced that too few C.I.O. members were affected by the WPA wage change to warrant national action. The A. F. of L. left the responsibility for calling strikes to its local councils, and most of the strikes were initiated by A. F. of L. affiliates, in some cases with the support of C.I.O. locals. Subsequently, William Green asserted that the remedy lay, not in a strike, but in Congressional action. He called a conference in Washington of A. F. of L. leaders with the object of securing revision of the law. When this objective proved to be unattainable for the time being, the A. F. of L. transferred its campaign to a demand for increased appropriations for the WPA, where workers' wages remained relatively high. The Workers Alliance asserted that, while it supported the strike, it had not instigated it and was more concerned with the layoffs than with wage rates; a one-day stoppage in New York State was voted by a mass meeting of the Alliance. The Workers Security Federation, another organization of the unemployed, stated that its 30,000 members staged one-day walkouts in various States as a protest measure.

It was estimated in the press that about 100,000 workers had walked out. WPA officials were inclined to minimize the extent of the strike, estimating on July 8 that only 3 per cent of WPA workers had struck and that the stoppages were of a minor nature except in New York, Ohio,

Wisconsin, and Minnesota. Disorders were not serious except in Rochester, N. Y., where the assistance of FBI agents was required, and in Minnesota, where a policeman was killed and a number of persons were indicted. (See MINNESOTA.)

Administration of Relief. The charge of extravagance in the administration of relief funds contained in the report of the House Appropriations Committee was one manifestation of a growing discontent with the manner in which the relief problem was being handled. The Republicans generally advocated placing of the administration in the hands of the States and localities, but no concrete steps were taken in this direction. A bill introduced by Senator Byrnes, which would provide for unification of the relief agencies, was withdrawn when the President announced his plans for reorganizing the administrative agencies of the government. By the President's reorganization plan, effective July 1, all the relief and security agencies were placed under a new Federal Works Agency (q.v.) and Federal Security Agency (q.v.).

State and Local Problems. Although the work relief program has remained a Federal undertaking, relief as a whole is by no means to be considered purely from the Federal standpoint. Even work projects are required to be locally financed in part, and to a larger extent than formerly under the new Act. The Social Security fund is financed by matching grants from Federal and State funds, and general relief has been left entirely to States and localities since the close of 1935, when the Federal Emergency Relief Administration was liquidated and the Federal government withdrew from that field.

That the States and localities were unable to cope adequately with the problem is seen in the continued decrease in sums spent by them for general relief. The curtailment of the Federal works program for the fiscal year 1940 placed an additional burden on the States in caring for the needy and has in some localities resulted in acute problems. (See the articles on the States, notably ARKANSAS, CALIFORNIA, MICHIGAN, OHIO, PENNSYLVANIA.) Furthermore, the conditions under which general relief is administered in various areas show startling variations. The American Association of Social Workers, in a study of this problem made during 1939, pointed out that in some sections in the South and Southwest there is no provision whatever for general relief, regardless of the need, and that in other localities the relief is shockingly inadequate. In some States the pauper's oath is still used, and, on occasions, persons receiving poor relief are disfranchised. The Association concluded that no uniform and adequate system of general relief can exist unless it is established by the Federal government. This opinion was, however, in marked contrast to a strong sentiment, especially apparent among Republican leaders, that the Federal government should withdraw further from the field of relief.

See CIVILIAN CONSERVATION CORPS; FARM SECURITY ADMINISTRATION; FEDERAL SURPLUS COMMODITIES CORPORATION; NATIONAL YOUTH ADMINISTRATION; PUBLIC WORKS ADMINISTRATION; SOCIAL SECURITY BOARD; WORK PROJECTS ADMINISTRATIONS. For non-government activities in the field of public welfare, see COMMUNITY CHESTS AND COUNCILS; RELIGIOUS ORGANIZATIONS; and the articles on the various churches, societies, and foundations, such as the CARNEGIE CORPORATION and the ROCKEFELLER FOUNDATION.

THE LARGER RELIGIOUS ORGANIZATIONS IN THE UNITED STATES

(With latest available statistics as supplied by the churches in December, 1939, unless otherwise noted.)

Church	Total U. S. Membership	Congregations or Churches	No. of Ministers	Annual Contributions	Baptisms and/or Conversions	Sabbath School Membership	Schools Maintained No.	Enrollment	Foreign Missionaries	Mission Church Membership
Roman Catholic Church	21,451,460	18,428	32,668		65,943		10,409	2,527,360	60,832	21,554,366
Methodist Church	7,535,000	43,100	24,900	\$75,500,000	475,000	5,575,000	140	105,000	1,300	365,000
Southern Baptist Convention	4,770,185	24,932	22,075	35,265,340		3,368,851	64	26,513	437	214,975
Jewish Congregations	4,716,856	14,789	12,182	47,905,850	131,737	1,928,773	82	21,000	436	283,030
Natl. Baptist Convention (col.)	3,225,000	15,000	20,000	3,500,000		1,500,000	12		50	55,000
Protestant Episcopal Church	2,068,000	7,463	5,930	33,406,466	61,811	466,763			431	89,274
Presbyterian Church, U.S.A.	1,929,671	8,637	9,492	39,844,395	89,452	1,361,272	62	23,366	1,242	53,105
Disciples of Christ	1,647,634	7,981	7,381	4,155,834	63,204	1,137,035	29	13,000	175	66,430
Northern Baptist Convention	1,504,942	7,445	7,668	21,778,577	59,473	1,101,392	66	35,150	508	377,281
Congregational & Christian	1,042,327	6,096	5,983	17,351,087	39,857	657,293	20	5,835	430	69,959
Evangelical & Reformed	833,790	2,916								
Latter-Day Saints (Mormons)	690,401	1,519								
African Methodist Episcopal	650,000	7,115								
African M. E. Zion	597,785	4,205								
Presbyterian, U.S. (Southern)	511,364	3,488	2,457	11,220,035	21,268	432,345	43	9,833	379	
Russian Orthodox	500,000	300	280	1,500,000	4,000	7,500	2			
Churches of Christ	433,714	6,226								
United Brethren	419,319	2,839	1,679	5,012,461	26,112	398,302	6	1,871	57	17,063
Colored Methodist Episcopal	333,600	3,648								
Greek Orthodox	305,000	255								
American Baptist Assn.	263,484	2,700								
Four-Square Gospel	257,635	367								
Evangelical Church	242,128	2,019	1,614	4,946,304	13,833	296,094	6	1,418	40	33,473
Polish National Catholic	230,000	152	138		16,100	9,000*	1		47	78,000
Church of Christ, Scientist	268,915	2,113	10,994			139,758				
Church of God in Christ (col.)	200,470	1,200	3,592			604,000	11	1,679	380	
Assemblies of God	184,022	3,496	891	4,064,154	9,913	164,656	10	4,052	348	
United Presbyterian	183,899	861	1,051	8,512,323	12,151	157,631	135	15,502		68,054
Seventh Day Adventists	169,292	2,588								
Church of the Brethren (Dunkers)	164,784	1,025								
Reformed Church in Am. (Dutch)	160,805	720	864	3,802,342	5,752	137,606	12	1,800	151	12,445
Church of the Nazarene	157,962	2,314	4,275	3,835,424	19,561	320,745	7	2,325	88	9,477
Salvation Army	240,258	1,631*	4,787*		74,235	116,241	4	243		
Christian Reformed	120,765	293	270			40,000	3	507	10	
Armenian Apostolic	108,000	52								
Latter-Day Saints, Reorganized	107,400	534	2,437	600,000	3,288	60,000	1	295	24	15,329
Primitive Baptists	103,125	2,700								
Serbian Orthodox	100,000	35								
Religious Soc. of Friends (Orthodox)	85,257	678								
Church of God (Anderson, Ind.)	83,113	1,353	1,982				2	360	46	24,348
Free Will Baptists	79,650	397								
Cumberland Presbyterian	71,726	1,120	814		1,500	56,000	1	450	22	1,400
Unitarian Churches	58,951	377								
Universalist General Convention	52,486	539	509			17,612	0		3	

* Estimates are from the Yearbook of American Churches, 1938. * Statistics include Canada. * Figures from 1926 census. * Excludes many churches in the fellowship but not reporting. Sabbath school figure is an estimate of attendance. * Catechism classes. / Elders. * Corps. * Officers. * Figures from 1936 census. / Practitioners.

RELIGIOUS ORGANIZATIONS. The table on page 674 lists the larger religious bodies in the United States with the latest available statistical information. See also separate articles, as BAPTISTS; FEDERAL COUNCIL OF THE CHURCHES OF CHRIST; JEWS; LUTHERAN CHURCHES; METHODISTS; ROMAN CATHOLIC CHURCH.

RENSSELAER POLYTECHNIC INSTITUTE. A nonsectarian institution for the technical training of men in Troy, N. Y., founded in 1824. In 1939 there were 1468 students enrolled. The teaching staff numbered 150. The productive funds amounted to \$5,165,786 as general endowment; the total income was \$998,112. As gifts for endowment \$22,262 was received. The library contained 31,000 volumes and 32,000 pamphlets. President, William O. Hotchkiss, C.E., Ph.D., D.Sc.

REORGANIZATION ACT. See UNITED STATES.

REPARATIONS AND WAR DEBTS.

Following the fate that Austria underwent in 1938, Czecho-Slovakia and Poland fell under the domination of conquerors in 1939 and ceased to have any power of paying the debts of their former governments to the United States Treasury. As the United States continued to recognize the fugitive governments of these nations it could not take the same step with regard to the intergovernmental debts of Czecho-Slovakia and of Poland that it had taken in giving notice that it held the German government responsible for the similar debt of Austria. On the contrary the Secretary of State sent a note, December 2, to the Ambassador of Poland, presenting a statement of sums due the United States on the 15th, and received a reply to the effect that the invasion of Poland had enhanced reasons formerly given for requesting the deferment of payments.

In the case of Finland, though the government of that country was already at grips with Russia, it made its usual payment in full of the sum coming due on December 15, thus emphasizing its claim to particular consideration in its plight (see also NEUTRALITY). President Roosevelt expressed the purpose of returning the current payment to

SUMS DUE AND PAYMENTS MADE IN 1939

Debtor	Came Due June 15	Cumulative total due unpaid, Nov 15	Came Due Dec. 15
Belgium	\$9,342,453 88	\$84,627,446 56	\$4,642,453
Czecho-Slovakia	1,682,812 78	21,363,839 19	1,682,812
Estonia	322,850 29	5,264,838 48	463,850
Finland	160,693 00		234,693
France	96,628,904 60	664,888,942 13	22,308,312
Germany (Austrian indebtedness)	494,860 23	1,979,440 92	
Great Britain	85,670,765 05	1,288,498,662 18	122,670,765
Greece	753,057 38	9,445,621 44	
Hungary	37,410 66	554,938 25	52,260
Italy	17,341,593 38	120,344,537 30	2,141,593
Latvia	134,883 26	2,068,777 96	192,483
Lithuania	170,711 93	1,815,028 48	121,466
Poland	4,039,039 71	65,472,266 52	5,662,039
Rumania	2,248,750 08	11,785,000 96	956,309
Yugoslavia	488,515 63	2,879,062 52	38,515
Total	219,517,301 86	2,280,988,402 89	161,167,556*
Payer	Paid June 15		Paid Dec. 15
Finland	\$160,693 00		\$234,693
Hungary	9,828 16		9,828
Total	170,521 16		244,521

* Sums from Greece due July 1 and Nov. 10.

The U.S. in certain cases, presented in December no statement of sums coming due; such cases were Czecho-Slovakia's, included in the list for December, and Austria's, omitted.

STATE OF DEBTS, NOV. 15, 1939

Debtor	Total indebtedness	Cumulative total payments rec'd	Principal of funded debt
Armenia	\$23,803,104		
Belgium	453,324,480	\$52,191,273	\$400,680,000
Cuba		12,286,751	
Czecho-Slovakia	165,762,044	20,134,092	165,241,108
Estonia	21,029,440	1,248,432	16,466,012
Finland	8,233,157	5,656,598	8,119,331
France	4,180,628,819	486,075,891	3,863,650,000
Germany (Austrian debt)*	26,011,672	862,668	25,980,480
Great Britain	5,497,069,379	2,024,848,817	4,368,000,000
Greece	34,523,635	4,039,888	31,516,000
Hungary	2,388,730	507,778	1,908,560
Italy	2,024,150,441	100,829,880	2,004,900,000
Latvia	8,668,365	761,549	6,879,464
Liberia		36,471	
Lithuania	7,760,608	1,237,956	6,197,682
Nicaragua		168,575	
Poland	263,166,398	22,646,297	206,057,000
Rumania	63,999,476	4,791,007	63,860,560
Russia	394,992,092	8,750,311	
Yugoslavia	61,779,062	2,588,771	61,625,000
Total	13,237,290,908	2,749,663,012	11,231,081,200

* Armenian and Russian debts are not funded.

According to a computation issued by the U.S. Treasury, Germany owed the U.S. \$1,259,870,431, apart from the sums against any debtor listed above, and not classed as war debts

Finland, provided that the forthcoming session of Congress should allow this step.

Senator Lundeen of Minnesota carried on in December an agitation to press the chief defaulting powers for payment, in cash, on the intergovernmental debts or, as the alternative, for their cession of insular possessions in the Western Hemisphere.

An accompanying table of *Sums Due and Payments Made in 1939* shows what sums came due and what sums were paid in that year, as well as the accumulated total standing due up to November 15. The other accompanying table, *State of Debts, November 15, 1939*, shows, by countries, the totals owed at that date, the totals of funded principal in particular, and the sums of debtors' payments up to then.

REPTILES. See ZOOLOGY.

REPUBLICAN PARTY. John D. Hamilton, chairman of the Republican National Committee, rejected in 1939 two informal proposals that the Republicans join the Democrats in an agreement on some matters of procedure prior to the campaign of 1940: after the opening of the special session of Congress he rejected the suggestion of the President that partisanship be suspended; and later he likewise replied negatively to an intimation that the President would welcome the calling of the National conventions, in 1940, at later dates than in previous Presidential years, in order to abbreviate the candidates' campaigns and cut the consequent expense.

The Republican National Committee announced, December 10, its reapportionment of the States' allotments of votes, in the Republican National convention of 1940. On account of the States' respective totals of popular votes for the National candidates in 1936, the reapportionment allowed 1000 convention votes in all, as against 1003 in the convention of 1936, and deprived four States of three votes each—they were Connecticut, Delaware, New Hampshire, and Pennsylvania—while New York gained two, and one vote more apiece went to seven States—Arkansas, Illinois, Massachusetts, Oklahoma, Tennessee, Texas, and Virginia. New York had had 90 votes to Pennsylvania's 75 in 1936; New York now received 92, to Pennsylvania's 72.

Some work was done that might help toward shaping a platform in 1940; the dislike of followers of some types of agriculture for the Government's reciprocal trade agreements with foreign countries and for other features of the farmers' treatment inspired Republicans to give increased attention to courting the farm vote; Representative Martin, Republican leader in the House, appointed (October 22) a committee of 36 colleagues of his party to study out ways for the Government's dealing with divers specific features of the agricultural problem, while McNary of Oregon, Republican leader in the Senate, proposed (November 20) a plank extending the Soil Conservation subsidies to all agricultural commodities.

One contender for the Republican Presidential nomination, Thomas E. Dewey, started an open campaign to gain it. Dewey, District Attorney of New York County (in New York City) received formal notification (December 1) from the New York State Republican Committee that it had chosen him for the preferred candidate. He followed up his acceptance with a speaking tour to Minneapolis, where (December 6) he denounced the New Deal as defeatism and as fomenting the spirit of despair.

RESEARCH COUNCIL, NATIONAL. An organization of American scientists, originally established in 1916 by the National Academy of Sciences for the purpose of co-ordinating the research facilities of the United States for work on war problems involving scientific knowledge, and reorganized in 1918 as a permanent body for the general encouragement of research in the natural sciences. The Council has close relationship with governmental scientific agencies, and has the formal recognition and co-operation of over 80 national scientific and technical societies, its membership being composed mainly of appointed representatives of these societies.

Among the major undertakings of the Council during 1939 were the administration of postdoctorate fellowships (numbering 36); the publication of the twelfth report of the Committee on Catalysis; the issuing of the sixth edition of the list of industrial research laboratories of the United States; the establishment of a journal for the publication of contributions in the field of psychosomatic medicine; investigations upon educational uses of the radio, motion pictures, phonograph, microphotography for record purposes, and the development of special calculating machines for research uses; and research upon problems relating to the physics of the earth, highway construction and highway safety, electrical insulation, heat transmission, the preservation of books and records, the chemistry of cellulose and allied substances, problems of mathematics as related to chemistry, density currents, sedimentation, the chemistry and pharmacology of narcotic drugs, psychological aspects of sex, endocrinology, the effects of radiation on living organisms, genetics of pathogenic organisms, aerobiology, and problems of neurotic behavior.

The general administrative officers of the Council for 1939-40 are: Chairman, Ross G. Harrison, Sterling professor of biology, emeritus, Yale University, New Haven, Conn.; Treasurer, Arthur Keith, geologist, 2210 Twentieth Street, N.W., Washington, D. C.; Executive Secretary, Albert L. Barrows. The headquarters of the National Research Council are in the National Academy of Sciences Building, 2101 Constitution Avenue, Washington, D. C.

RESERVE OFFICERS' TRAINING CORPS (R.O.T.C.). See **MILITARY PROGRESS.**
RESIDENTIAL ARCHITECTURE. See **ARCHITECTURE.**

RESOURCES, NATIONAL. See **NATIONAL RESOURCES PLANNING BOARD.**

RÉUNION, rā'ū'nyōn'. A French island colony 420 miles east of Madagascar. Area, 970 square miles; population (1938 estimate), 210,000, as against (1931) 197,933 including 194,272 French, 2242 Chinese, 302 Africans, 921 natives of Madagascar, and 196 British Indians. Chief towns, with 1936 population in parentheses: St. Denis (30,762); St. Paul (21,485); St. Louis (19,195); St. Pierre (17,924). The chief port is Pointe-des-Galets.

Sugar (80,000 metric tons, 1939), rum, manioc, coffee, tapioca, vanilla, and spices are main products. Spirits manufactured in 1937 totaled 1,198,340 gallons. In 1938, total imports were valued at 263,900,000 francs; exports at 206,400,000. The budget for 1937 was balanced at 61,620,700 francs. (Franc averaged \$0.0405 in 1937 and \$0.0288 in 1938.) Administration is under a governor assisted by a privy council, and an elective council-general. Réunion is represented in the French Parliament by a senator and two deputies. Governor, M. Truitart.

REVENUE. See **PUBLIC FINANCE**; articles on all foreign countries under *Finance*.

REVENUE ACT. See **TAXATION.**

REXISTS. See **BELGIUM.**

RFC. Reconstruction Finance Corporation (q.v.).

RHODE ISLAND. Area and Population. Area, 1248 square miles; included (1930) water, 181 square miles. Population: Apr. 1, 1930 (census), 687,497; July 1, 1937 (Federal estimate), 681,000; 1920 (census), 604,397. Providence, the capital, had (1930) 252,981 inhabitants.

Agriculture. Rhode Island harvested, in 1939, 62,100 acres of principal crops. Of this area, almost three-fourths was in tame hay, which took up 45,000 acres and gave 52,000 tons (estimated farm value, \$879,000); potatoes, on 4100 acres, made 779,000 bushels (\$779,000); 10,000 acres in corn yielded 410,000 bushels (\$291,000).

Manufacturing. As shown in 1939 by the U.S. Census of Manufactures covering 1937, totals for Rhode Island (with figures for 1935 in parenthesis) were: Active manufacturing establishments, 1409 (1420); wage-earners there employed, 108,031 (100,852) wages paid to such earners, \$112,933,084 (\$94,321,904); factories' output, \$517,196,193 (\$411,885,779); part of this value contributed by processes of manufacture, \$240,457,582 (\$186,296,070).

Weaves of worsted, the manufactured product leading in aggregate value of output, totaled \$100,345,663 for 1937; the related production of worsted yarn was \$26,815,335. Weavers of rayon produced \$23,870,926 in broad fabrics and \$957,793 in narrow ones. The output of cotton fabrics amounted to \$27,590,210 for the broad fabrics and \$11,369,180 for the narrow. Weaves of silk totaled \$2,434,553. The output of dyers and finishers attained \$20,675,576 in cotton fabrics, \$4,876,606 in rayons and silks, and \$1,753,403 in woollens and worsteds. Jewelers' output amounted to \$21,581,110. Electrical machinery, apparatus and supplies to the value of \$16,548,287 were made.

Over three-eighths of the manufactured product of the State, for 1937, was made in Provi-

dence; here 42,270 wage-earners were employed in manufacture, receiving \$15,716,989, and factories produced goods to the value of \$198,783,188. Pawtucket, second in rank, attained \$73,567,668 in total of goods manufactured.

Education. For the academic year 1938-39 Rhode Island's inhabitants of school age (from 4 through 20 years) were stated at 195,109. Enrollments of pupils in all public schools numbered 117,541; this comprised 68,790 in elementary study, 25,449 in junior high schools, and 23,302 in high schools. In addition, other than public schools reported 34,256 enrollments. The year's expenditure for public-school education, \$10,824,011, included pay for 4410 teachers, averaging \$1791.52.

Legislation. The regular annual session of the General Assembly, controlled in both houses by the Republicans, worked in accord with Governor Vanderbilt on important measures for the improvement of the State government. It appropriated \$15,196,445 for the next fiscal year. To make up the remainder of a deficiency of \$2,500,000, left by the previous administration and partly offset by reduced prospective expenditure, several taxes were created or increased; to yield the main part of the requisite sum, sales of cigarettes were taxed at two cents a package and other tobacco at 10 per cent of the price; the tax on public utilities' gross incomes was increased; that on inheritances was raised, as to those of medium size. A new system of civil service was created; it was to supersede the existing civil-service commission and to cover a much wider field, including nine-tenths of the State's servants; statutory civil service under the new plan was to go into effect at the start of 1940, and in the meantime a Civil Service Director, to receive pay of \$6000 a year, was to be chosen by public examinations held in divers parts of the country; a beginning was made with the process of writing the scheme of civil service into the State's constitution, a proceeding that called for the passage of a constitutional amendment by two-thirds majority in two successive Legislatures and thereafter by popular vote.

Failure, by accidental omission, to enact an extension, for another year, of the period of emergency in which the local governments might use special powers for meeting the cost of poor-aid necessitated a brief special session to remedy the oversight.

Political and Other Events. William H. Vanderbilt, whose two-year term as Governor began in January, was the leading spirit in legislation for civil service and for State economy; the support of Republican legislative majorities and the general reaction against the methods of the outgoing regime afforded him an unusual opportunity to put the State government in better order. Although he found a deficit in the State's operating accounts, reported as totaling \$2,500,000 awaiting him, he was credited with making up the amount by the end of June. There had been heavy enlistments of Democrats on the State payrolls in the incumbency of Governor Quinn; Vanderbilt reduced the number of the State's employees to about 3000, from 4000. This course helped substantially toward effacing the deficit, and reductions in salaries and additional taxation did the rest of the task. The State's new tax on retail sales of tobacco and cigarettes went into force about the same time as that of Massachusetts; consequently the citizens of neither State could

long shop with advantage for cigarettes across the mutual border.

A strike of truck-drivers in Rhode Island and adjoining States started on March 20, upon the failure of the drivers' union to win an increase in wages. To prevent renewal of the attacks made on non-striking truckers in the predecessor strike of 1937, the State police, on the authority of a statute, warned the union's pickets off Rhode Island's highways. The strike ended, April 11, in agreement upon a contract expected to settle for four years the status of unionized employees in the region's highly developed trucking activity.

The Federal Government had under development in 1939 plans for coastal defences at Point Judith and Little Compton and for a naval airbase at Quanset Point. Newport celebrated its tercentenary on May 23.

Officers. Rhode Island's chief officers, serving in 1939, were: Governor, William H. Vanderbilt (Rep.); Lieutenant-Governor, James O. McManus; Secretary of State, J. Hector Paquin; Attorney-General, Louis V. Jackvony; General Treasurer, Thomas P. Hazard; Director of Coordination and Finance, Preston F. Arnold; Comptroller, Samuel A. Place; Director of the Department of Education, James F. Rockett.

RHODESIA, NORTHERN. A British protectorate in Africa. Area, 290,320 square miles; population (1937), 1,377,346, including 1,366,425 Africans, 10,500 Europeans, and 421 Asiatics. Chief towns: Lusaka (capital), Livingstone, Broken Hill, Fort Jameson, and Mazabuka. On June 1, 1937, a total of 127,000 pupils were enrolled in 1460 recognized schools.

Production and Trade. Maize (18,700 metric tons, 1938); wheat (500 metric tons, 1938); tobacco, coffee, oil seeds, citrus fruits, and teakwood are important products. In 1938 there were 619,000 cattle in the territory. Mineral production in metric tons, 1938, was: Copper, 213,000; manganese, 800; zinc, 10,400; vanadium, 374; lead, 300. Gold (1113 fine oz., 1938), and silver (88,237 fine oz.) are also mined. In 1938, imports were valued at £5,223,693, exports, £10,134,861.

Government. For 1938 revenue totaled £1,593,504; expenditure, £1,417,776. Revenue for 1939 was estimated at £1,480,590. The protectorate is administered by a governor, aided by an executive council of 16 members. Governor, John A. Maybin (appointed, June 27, 1938).

History. A royal commission, headed by Lord Bledisloe, to investigate the possibilities of closer co-operation among Northern and Southern Rhodesia and Nyasaland, published its report on Mar. 22, 1939. The commission rejected federation and amalgamation because of the different stages of social and political development in the three territories; but recommended an inter-territorial council (1) to co-ordinate existing government services and (2) to frame plans for joint economic development.

A suspension bridge across the Zambesi River at Chirundu, connecting Northern and Southern Rhodesia, was formally opened on May 24, 1939. The bridge is the final link in a modern motorway extending from Salisbury to Lusaka.

RHODESIA, SOUTHERN. A British self-governing colony in Africa. Area, 150,344 square miles; population (June 30, 1938, estimate), 1,375,540 including 1,311,000 natives, 58,870 Europeans, and 5670 Asiatic and colored persons. Chief towns: Salisbury, the capital, including suburbs, had 32,846 inhabitants; Bulawayo, with suburbs,

29,126; Umtali; Gwelo; Gatooma; Que Que; Shabani; Selukwe; Sindura; Wankie; and Fort Victoria. During 1937 there were 1308 births of Europeans (22.92 per 1000), 536 deaths (9.39 per 1000), and 686 marriages (24.04 per 1000). On Dec. 31, 1937, the 1418 schools of all kinds had 116,475 pupils enrolled.

Production and Trade. Principal agricultural products were maize (129,900 metric tons, 1938); wheat (3400 metric tons, 1939); cotton; tobacco; groundnuts; fruits; butter (600 metric tons, 1938); and cheese (200 metric tons, 1938). Live-stock in the country included 2,316,832 cattle (1938), 319,000 sheep (1938), and 105,610 swine (1936). Gold production, 1938, totaled 814,078 fine oz.; silver, 166,419 fine oz. Other minerals (1938) in metric tons were: Coal, 998,000; tin ore, 300; chrome ore, 91,000; tungsten ore, 196; antimony ore, 79; pyrites, 27,000. Total imports, 1938, were valued at £8,400,000; exports, £10,500,000.

Communications. The total length of railway line in operation (Sept. 30, 1937) was 2709 miles. Road motor services with an aggregate length of 1629 miles supplement the railways. There is a network of airways covering the country and connections are made with Imperial Airways' service between London and South Africa. There were 39,924 miles of telegraph and telephone lines in 1937.

Government. For the fiscal year ended Mar. 31, 1939, revenue totaled £3,320,000; expenditure, £4,865,471; public debt, £12,367,224. The government is headed by a governor who is assisted by an executive council. There is a legislative assembly of 30 members elected for five years by popular franchise. Governor and Commander-in-chief, Sir H. J. Stanley (appointed in 1934); Prime Minister and Minister of Native Affairs, G. M. Huggins.

History. The Huggins government was continued in power with an unchanged majority in the election of Apr. 14, 1939. The United party held 23 seats and the Laborites 7 in the parliament. In August, 1939, as European war tension heightened, the Assembly passed an Emergency Powers (Defense) Bill giving drastic powers to the government, including the right to conscript industry and curb profiteering. Earlier in the year the government began compiling a "compulsory national register" in which men were classified for various war time or emergency duties. When war came, the colony rallied to the aid of the mother country, contributing men, and materials for the Empire's defense. The government announced November 20 that its war commitment involved recurrent expenditure of £1,300,000 a year.

For details of the Bledisloe report rejecting amalgamation of Northern and Southern Rhodesia and Nyasaland, and for an account of the new Chirundu suspension bridge, see RHODESIA, NORTHERN, under *History*. Also see BRIDGES.

RHODES. See ÆGEAN ISLANDS, ITALIAN.

RICE. Rice production in the United States in 1939 was estimated to total 52,306,000 bu. from 1,039,000 acres v. 52,506,000 bu., the large crop of 1938 from 1,076,000 acres, and compared with the 1928-37 average of 43,387,000 bu. and 913,000 acres. Yields per acre averaged 50.3 in 1939, 48.8 in 1938, and 47.5 bu. over the 10-year period. Yields in producing States were Louisiana 20,597,000 bu., Texas 13,988,000, California 9,000,000, and Arkansas 8,721,000 bu. Conditions were generally favorable for high production. The

season average price per bushel received by farmers was 77.3¢ and the value of production was estimated at \$40,424,000 compared to 64.2¢ and \$33,714,000 in 1938.

The 1938-39 crop of rough rice in other producing countries was for India 1,762,148,000 bu., Japan 598,914,000, Burma 400,412,000, Siam 241,887,000, Chosen 218,975,000, and Philippine Islands 119,000,000 bu. World production in 1938-39, 18 countries including U.S.S.R. reporting, was estimated at 3,727,646,000 bu. See *Production* under individual countries.

HENRY M. STEECE.

RICE INSTITUTE. A coeducational institution for higher education in Houston, Texas, opened in 1912. The enrollment in the autumn of 1939 was 1434, and the faculty numbered 93. The plant equipment and productive funds of the institution were estimated at \$17,000,000, and the income from endowment for the fiscal year 1938-39 was in excess of \$600,000. The library contained 140,000 volumes. President, Edgar Odell Lovett, Ph.D., Sc.D., LL.D.

RIO DE ORO. See SPANISH WEST AFRICA.

RIO MUNI. See SPANISH WEST AFRICA.

RIOUW-LINGGA. See NETHERLANDS INDIES.

ROADS AND STREETS. Renamed as Public Roads Administration, the Bureau of Public Roads was transferred on July 1 from the Department of Agriculture to the newly created Federal Works Agency, under Federal Reorganization Plan No. 1. During the year ended June 30, the Bureau participated in over 17,000 miles of highway improvements of various types, from grading and draining roadbeds, constructing sand-clay and gravel roads, to highest classes of road surfacing, to bridge construction and the elimination of railroad and highway grade crossings. For 13,482 miles of construction, the leading mileages of road surfacing were: low-cost bituminous mix, 2568; Portland-cement concrete, 2517; treated gravel, 2368. Texas led with 1710 miles of roads improved, of which 684 were treated and 321 untreated gravel and 210 miles Portland-cement concrete. Hawaii had 28 miles of treated macadam. Of the 13,482 miles improved, 9786 were in the Federal-aid system outside of municipalities; 586 miles of extension of the system into and through municipalities, 139 miles of secondary roads within, and 2971 miles outside municipalities. The cost of the completed work was \$196,566,311 in Federal and \$139,524,945 in State funds. Under contract on June 30 were 10,012 miles, while 2718 miles additional had been approved only.

The foregoing figures do not include road construction through public lands and Federal reservations, of which 244 miles were completed and 200 miles were under construction or contract. Of 21,981 miles of forest highways in 36 States, Alaska, and Puerto Rico, 413 were brought to completion during the fiscal year, but only 164 miles of these were improved for the first time. During the year 146 miles of road had been constructed in the 36 States having national parks and monuments, bringing the total to 1577 miles completed. Federal aid for restoration of flood-damaged roads and bridges in 11 States has been carried on under special acts of Congress authorized in 1928-31. This has been completed in seven States. Allocation to the several States of \$156,000,000 for highway improvement and elimi-

nation of hazards at railway crossings for work in 1940 was announced December 30 by the Federal Works Agency. The allotments range from \$9,728,530 for Texas and \$8,299,635 to New York to \$780,000 each for Delaware, Rhode Island, Vermont, and Hawaii. In addition, \$2,000,000 was apportioned for roads through public lands and reservations in thirteen States. Assistance to Central American countries engaged on an Inter-American Highway from Laredo, Texas, to Panama City was continued by the Bureau of Roads. Bridge erection was aided in Panama, Costa Rica, Nicaragua, Honduras and Guatemala.

Construction of the South Penn Toll Road, extending 161 miles from Middlesex, 15 miles west of Harrisburg, to Irwin, 20 miles east of Pittsburgh, was pushed by the Pennsylvania Highway Commission. The road will utilize as much as may be of the grading and tunnels of a railway project started and abandoned fifty years ago. It will be a four-lane highway, by-passing all towns, with no grade crossings of either highways or railways. Grades will be three per cent or less compared with a maximum of eight to nine per cent on the existing route. There will be $6\frac{1}{2}$ miles of tunnels and 300 bridges and culverts. The estimated cost of \$60,000,000 will be met by bonds. The first contracts were let late in October, 1938, but most of them in 1939. Completion by June 29, 1940, is proposed.

The Highway Research Board held its 19th annual convention in December. Its membership is drawn from Federal bureaus, State highway departments and colleges. Its work is carried on by seven departments: Finance, economics, design, materials and construction, maintenance, traffic, and soil investigations. (See *Engineering News-Record*, Dec. 14 and 21, 1939.) Among other conventions that considered roads and pavements during the year were the Asphalt Institute, the American Concrete Institute, the Association of State Highway Officials and the Roadbuilders' Conference. See also PLANNING.

World Highways. According to the annual survey published by the U.S. Bureau of Foreign and Domestic Commerce, there were 10,036,233 miles of road throughout the world in 1939 and 43,819,929 motor vehicles, as compared with 6,582,001 miles and 32,034,572 vehicles in 1929, the year of the first survey. Figures for the leading countries are given in the accompanying table. The number of automobiles is computed on the basis of registration and includes passenger cars, trucks, and busses.

Bibliography. Bateman, *Introduction to Highway Engineering*, 3 ed. (London and New York); Breed and others, *Highway Costs* (Washington, D. C.); Gubbeles, *American Highways and Roadsides* (Boston).

M. N. BAKER.

ROCHESTER, UNIVERSITY OF. A nonsectarian, privately endowed institution of higher education for men and women at Rochester, N. Y., founded in 1850. It includes three schools: The College of Arts and Science, composed of a College for Men and a College for Women, on separate campuses; the Eastman School of Music, and a School of Medicine and Dentistry. A School of Nursing is also maintained in conjunction with the Strong Memorial Hospital, property of the University. An Institute of Optics is part of the arts college. The enrollment for the first term of 1939-40 was 2359 (exclusive of extension

HIGHWAYS OF THE WORLD—1939

Continent or Country	Road mileage	Area to 1 mile of road	Automobiles
AMERICA—Total.	4,252,687	3.7	32,115,549
Alaska	2,088	283.0	4,156
Argentina	253,115	4.6	275,300
Bolivia	10,154	60.4	3,613
Brazil	129,057	25.4	170,300
Canada	599,040	6.6	1,375,133
Chile	22,613	12.7	43,905
Colombia	14,637	33.9	26,437
Cuba	2,214	19.9	43,852
Dominican Republic	935	20.7	2,620
Guatemala	3,626	11.1	3,927
Haiti	1,426	7.2	2,427
Jamaica	6,898	0.6	10,004
Mexico	56,923	13.5	99,470
Newfoundland	5,940	7.2	5,048
Nicaragua	1,550	31.1	842
Panama & Canal Zone	870	37.2	13,158
Peru	14,602	35.9	26,755
Puerto Rico	11,252	0.3	21,500
Salvador, El.	3,669	3.6	2,267
United States	3,065,000	1.0	29,852,910
Uruguay	22,487	3.2	63,650
Venezuela	5,882	67.0	29,511
EUROPE—Total	3,564,929	2.9	9,276,470
Albania	1,759	9.9	970
Belgium	20,244	0.6	233,886
Bulgaria	16,843	2.4	4,706
Czecho-Slovakia	43,718	1.2	73,168
Denmark	12,212	0.5	154,288
Estonia	13,416	1.4	5,913
Finland	39,826	3.3	45,588
France	393,761	0.5	2,251,300
Germany (with Austria)	262,874	0.8	1,819,924
Greece	8,440	6.0	14,000
Hungary	51,409	0.7	23,356
Ireland (Eire)	48,550	0.6	64,840
Ireland, Northern	11,008	0.4	51,819
Italy	174,938	0.6	467,624
Latvia	59,268	0.4	6,715
Lithuania	20,856	1.0	3,423
Luxemburg	2,558	0.4	10,104
Netherlands	16,031	0.8	152,386
Norway	25,699	4.9	90,687
Poland	208,617	0.7	44,320
Portugal	19,746	1.8	48,370
Rumania	62,568	1.8	27,100
Spain	70,760	2.7	125,000
Sweden	53,980	3.2	219,201
Switzerland	10,291	1.5	75,650
United Kingdom	178,904	0.5	2,558,740
U.S.S.R	1,682,000	4.9	672,952
Yugoslavia	26,183	3.7	18,567
AFRICA—Total	456,023	24.3	638,517
Algeria	47,479	17.8	60,030
Anglo-Egyptian Sudan	14,240	70.8	4,502
Angola (Port W Africa)	22,990	21.1	3,920
Belgian Congo	43,949	20.9	7,340
Egypt	6,326	60.0	33,806
French Equatorial Africa	14,713	62.2	2,400
French West Africa	33,565	55.2	15,783
Libya	8,342	50.7	1,505
Madagascar & Réunion	14,353	15.9	9,500
Morocco (French)	3,690	43.8	36,500
Mozambique	17,746	16.2	6,351
Nigeria	21,277	17.5	7,814
South Africa, Union of	88,949	5.3	350,281
South-West Africa	20,000	16.1	4,950
Swaziland	800	8.3	860
Tanganyiki	22,136	26.9	4,776
Tunisia	7,887	6.1	19,482
ASIA—Total	1,182,011	8.6	680,921
Burma	12,543	16.2	21,209
Ceylon	17,806	1.4	27,981
China	61,430	69.9	45,922
French Indo-China	19,926	14.3	23,011
India, British	301,579	3.6	106,951
Iran (Persia)	15,043	41.7	11,622
Iraq	6,463	22.2	6,214
Japan	591,766	0.2	180,900
Korea (Chosen)	19,043	4.5	9,500
Netherlands Indies	42,506	17.3	73,717
Palestine	2,201	4.0	13,725
Philippine Islands	11,888	9.6	49,027
Rhodesia, Northern	8,175	35.6	6,610
Rhodesia, Southern	12,549	11.1	19,215
Syria	7,072	10.5	11,594
Thailand (Siam)	3,394	58.2	11,185
Turkey	25,656	11.1	11,117
AUSTRALASIA—Total	580,583	5.9	1,088,569
Australia	485,546	6.1	757,982
New Zealand	87,760	1.2	261,850

division, 1921) and was distributed as follows: Arts and Science, 1136; music, 379; medicine and dentistry, 200; nursing, 132; graduate students, 512. For the summer session, 469 were enrolled in the art college and 508 in the music school. There were 550 members of the faculties, including 340 full-time. The amount of endowment as of June 30, 1939 was \$52,279,018, besides reserve funds of \$3,723,408. Expenditures for 1938-39 were \$4,126,332, including old-age pensions and insurance for all employees. The library contained 345,522 books. President, Alan Valentine, LL.D., L.H.D., Litt.D.

ROCKEFELLER FOUNDATION, THE

An organization chartered in 1913 for the permanent purpose of promoting the well-being of mankind throughout the world. Its programme is concerned with certain definite problems in the fields of the medical, natural, and social sciences, the humanities, and public health. For work in these fields the Foundation during 1939 appropriated approximately \$9,400,000. A statement of the major grants follows.

Medical Sciences. In the field of medicine the Foundation's interest is centered on mental and nervous diseases and its contributions are largely for the furtherance of research and teaching in psychiatry and allied subjects. Among the appropriations made in 1939 for investigations and teaching in psychiatry were \$106,080 to the University of Toronto, \$85,000 to the Catholic University of America, \$71,000 to the Johns Hopkins University School of Medicine, \$60,000 to the Institute of the Pennsylvania Hospital, \$68,000 to the Harvard Medical School and the Massachusetts General Hospital. Other grants in the field of medicine were \$50,000 to the Forman Schools, Litchfield, Connecticut, for support of studies on apraxia and related phenomena in children; \$75,000 to the University of California for research on hormones and vitamins; \$50,000 to the Medical Research Council of Great Britain for research in endocrinology, psychiatry, neurology, and allied subjects; \$400,000 to Harvard University toward endowment of a School of Dental Medicine; \$350,000 to the Johns Hopkins University School of Medicine toward support of a new department of preventive medicine and public health; \$90,000 to the Johns Hopkins University School of Medicine for a fluid research fund.

Natural Sciences. In the field of the natural sciences the Foundation's programme is confined almost entirely to experimental biology. Appropriations in 1939 were practically all for studies of the phenomena of life. They included \$500,000 to the Johns Hopkins University for endowment of the departments of the biological sciences; \$200,000 to Stanford University for research in biology; \$189,000 to Yale University toward the support of its laboratories of primate biology; \$115,000 to Oxford University for construction and equipment of a laboratory for research in organic chemistry; \$80,000 to the University of Missouri toward the construction of a laboratory for research in genetics and \$20,000 to this university for the support of research in genetics; \$70,000 to the California Institute of Technology for the development of chemistry in its relation to biological problems; \$60,000 to Washington University, St. Louis, toward the construction of a cyclotron in the Institute of Radiology for use in biological and medical experimentation; \$50,000 to the University of California toward the expenses of cyclotron research in biology;

and \$241,956 to the National Research Council toward its administrative budget and for conferences, special studies, and fellowships in the natural sciences.

Social Sciences. The Foundation has three spheres of special interest in the social sciences at the present time: social security, public administration, and international relations. Appropriations made during 1939 for projects in these fields were as follows: \$940,000 to the National Bureau of Economic Research toward its research and co-operative programmes; \$225,000 to Brookings Institution toward the support of its research programme; \$165,000 to the Social Science Research Council for the work of its Committee on Social Security and its Public Administration Committee, and \$105,000 for the general administrative expenses of the Council; \$55,000 to Harvard University toward the support of its Graduate School of Public Administration; \$50,000 to Syracuse University for training courses in public administration under the direction of its School of Citizenship and Public Affairs. Other grants were \$60,000 to the University of Chicago toward the budget of the School of Social Service Administration, and \$51,250 to the London School of Economics and Political Science.

The Humanities. The programme in the humanities is concerned with the techniques, such as museums, motion pictures, radio, drama, and libraries by which cultural levels of contemporary society are being influenced, and with the promotion of better international understanding through cultural interchanges. Appropriations in 1939 included \$75,000 to the Museum of Modern Art for rotating funds for circulating exhibitions and for publication purposes; \$60,000 to the American Film Center toward the support of advisory service to educational and public service agencies wishing to use motion pictures for their purposes; \$60,000 to the American Library Association for European activities of its Committee on International Relations and \$30,000 to this association for studies of library co-operation with Latin America; \$80,000 to the American Council of Learned Societies for fellowships, planning committees, and international activities; and \$50,000 to Harvard University for research in criticism and in uses of language.

Public Health. The Foundation appropriated \$2,200,000 for the work of its International Health Division during 1939. This work included research on a number of selected diseases, among them yellow fever, malaria, tuberculosis, influenza, the common cold, rabies, syphilis, and intestinal parasitism; demonstrations in the control of certain of these diseases in their environment; co-operation with governments in the organization or improvement of important services of central or local health departments; and the development of public health education.

Officers. The executive officers of the Foundation in 1939 were John D. Rockefeller, Jr., Chairman of the Board of Trustees; Raymond B. Fosdick, President; Thomas B. Appleget and Selskar M. Gunn, Vice Presidents; Alan Gregg, M.D., Director for the Medical Sciences; Warren Weaver, Director for the Natural Sciences; Joseph H. Willits, Director for the Social Sciences; David H. Stevens, Director for the Humanities; Wilbur A. Sawyer, M.D., Director of the International Health Division; Norma S. Thompson, Secretary; Edward Robinson, Treasurer; George J. Beal, Comptroller; Thomas M.

Debevoise, Counsel; and Chauncey Belknap, Associate Counsel. Offices were maintained at 49 West 49th Street, New York City.

ROGERS, JAMES HARVEY. An American economist, died in an airplane accident at Rio de Janeiro, Aug. 13, 1939. Born in Society Hill, S. C., Sept. 25, 1886, he was educated at the University of South Carolina (A.B., 1906; B.S., M.A., 1907) and Yale University (A.B., 1909, Ph.D., 1916). After study abroad at the University of Geneva, Switzerland (1914-15), he joined the faculty of the University of Missouri as an instructor in economics, but resigned in 1920 in protest against the suspension of two members of the faculty. Until 1923 he was at Cornell University, but then returned to the University of Missouri as a full professor. He became professor of political economy at Yale University in 1930 and Sterling professor in 1931.

During 1926-35, Dr. Rogers lectured at the Geneva School of International Studies five times; in 1917-18 he was statistician for the Council of National Defense in Washington; from 1933 to 1937 he was a member of the Economic Committee of the League of Nations, and in 1934 he was a special representative for the U.S. Treasury in China, Japan, and India. One of the nation's leading economists, he was one of the first members of President Roosevelt's "brain trust," and with the late George F. Warren played an important role in shaping the Administration's monetary policy. He was an advocate of inflation.

Besides the section on "Foreign Markets and Foreign Credits" of the *Report of the Committee on Recent Economic Changes* of the President's Conference on Unemployment (1929), Dr. Rogers was the author of *Stock Speculation and the Money Market* (1927); *The Process of Inflation in France, 1914-27* (1929); *America Weighs Her Gold* (1931), and *Capitalism in Crisis* (1938).

ROLLINS COLLEGE. A nonsectarian, co-educational institution of higher learning in Winter Park, Fla., founded in 1885. The enrollment for the fall term of 1939-40 was approximately 400. The full-time faculty members numbered 56. The productive endowment, and other invested funds serving as endowment, amounted to approximately \$1,250,000, yielding an annual income of about \$33,000. The net income from all other sources was in excess of \$290,000. The library contained approximately 57,000 volumes. President, Hamilton Holt, Litt.D.

ROMAN CATHOLIC CHURCH. At few periods in history have the eyes of the world been so carefully directed toward the Vatican. The death of Pius XI (q.v.) and the election and coronation of Eugenio Cardinal Pacelli as Pope Pius XII were dominant events in the first part of the year; and, since the outbreak of the war, the new Pontiff's efforts for peace have been watched by statesmen in all world capitals. On the eve of the 17th anniversary of his coronation and the 10th of the settlement of the Italian Question, Pius XI died on February 10, at the age of 82. Immediately the members of the Sacred College of Cardinals not in Rome commenced their journeys to the Eternal City to participate in the Conclave, the solemn assembly at which they elect a successor to the See of Peter. By decree of Pius XI, issued shortly after his accession, the date of the Conclave was changed from 10 to 15 days after the Pontiff's death. Cardinal Pacelli's position as Secretary of State ceased with the Pope's death, but,

since he also occupied the post as Cardinal Camerlengo of the Church, he continued as first in authority, assisted in administrative duties by Cardinal Granito Pingatelli di Belmonte, William Cardinal O'Connell, and Caccia Cardinal Dominoni. These and all other Cardinals in Rome held a General Congregation each day and arranged for the funeral of the dead Pontiff, as well as the details of the Conclave which was opened on March 1 with a Solemn Mass of the Holy Ghost in the Pauline Chapel. Later the College adjourned to the Sistine Chapel and its adjacent rooms, where all participating in the Conclave took oaths to observe the law of elections, prime among which is that prohibiting any communication with the outside world save for those vested with special authority. As earnest of this, the Sistine apartments were sealed. The balloting began on March 2 and since no two-thirds majority was attained in the first two ballotings, a third was held the same day. This resulted in a vote for Cardinal Pacelli of 61 to 1, the one vote presumably cast by the man thus designated as Successor of Peter. The Cardinal-Dean then informed Cardinal Pacelli of the election and the latter, in accepting his elevation chose the name, Pius XII. Donning the papal robes, the New Pontiff received the homage of the Cardinals, his election was announced to the thousands congregated in the Piazza of St. Peter and shortly after Pius XII appeared on the loggia above the square and gave his benediction "Urbi et Orbi"—to the City and the World. On March 12, not according to custom in the Basilica of St. Peter's but on the central balcony overlooking the square, Pius XII was crowned with the triple tiara by the Cardinal-Dean with all the pomp of the Church and before the representatives and special legations of many nations. Whereas the election of the former Papal Secretary of State was not gratifying to Germany, it was hailed in almost every quarter of the world as an event of great auspiciousness. The quick decision of the Conclave and the breaking of precedent—no Secretary of State has been elected to the papacy for three centuries—were regarded as happy circumstances, and there was rejoicing throughout the world that one so familiar with international conditions and statescraft should be chosen.

The appointment of Luigi Cardinal Maglione as Papal Secretary of State was one of the first actions of the new Pope, who received in audience the special emissaries of various nations, including the United States' representative, Joseph P. Kennedy. He also received Queen Elena of Italy, the nine-year old Crown Prince Baudouin of Belgium, Crown Prince Umberto of Italy, and Minister for Foreign Affairs, Count Ciano. Another early action of the Pope was to send, although German papers had attacked his election, a special blessing to Germany: "Tell everyone how I love Germany and am disposed to do much for her." In a later statement, he made "special mention of our gratitude for the tokens of reverent homage which we have had from the sovereigns, heads of state and governments, of those nations with which the Holy See is in friendly relations." He placed the administration of Vatican City and its civil offices and the care of the papal villa at Castelgandolfo under a commission of cardinals, of which Cardinal Canali is president, and named Msgr. Alberto Arborio-Mella di Santi'Elia as Maestro di Camera. Later in May he requested a crusade of prayer for peace by all the faithful; but it is not true that

the Pope then sought to initiate a Peace Conference among nations, as had been rumored. He had, however, moved in diplomatic channels and directed papal nuncios to communicate to heads of governments his ardent desire that peace may not be compromised so that any questions at issue might be settled by pacific means.

Another more dramatic appeal to the world for peace was broadcast on August 24: "We, armed only with the word of truth, and standing above all public disputes and passions, speak to you in the Name of God . . . The tension of minds seems to have arrived at such a pass as to make an outbreak of the awful scourge of war appear imminent . . . but there is yet time. Nothing is lost with peace; all may be lost with war. Let men return to mutual understanding! Let them begin negotiations anew, conferring with good-will and with respect for reciprocal rights." With the outbreak of war the Holy Father appealed to all the world for prayers that its horrors may be minimized. In all his utterances, the position of the Vatican in the conflict was reconfirmed as one of strict neutrality. The conquest of Poland, a country whose people are profoundly and traditionally attached to Catholicism, moved the Pope deeply and he expressed particular concern for those in Soviet-occupied territory. When a pilgrimage from Poland headed by the Primate, Cardinal Hlond, was received he praised their "national history, during almost 10 centuries consecrated to the service of Christ" and assured them that "Poland will not die."

On October 27, Pius XII issued his first encyclical, "Summi Pontificatus." In this document he sternly arraigned statism and the evils it breeds, and exhorted Christian solidarity to save world civilization. A second encyclical "Sertum Laetitiae" was issued to the hierarchy of the United States on the occasion of the celebration of its 150th anniversary.

Receiving the Lithuanian Minister on October 18, the Pope definitely indicated he would, if requested, direct his activities toward settlement of temporal controversies between States. He gave notice, however, that, unless requested, he would, as Supreme Pastor, be concerned only with combatting the menace to Christian Europe and the dangers which threaten the salvation of souls. Twelve days later when he personally officiated at the consecration of 12 missionary Bishops from all parts of the world, His Holiness said while hatred and jealousy too often divide men in the world at large, the Catholic Church, with its immense charity, embraces all the human family without distinction as to race or rank. The first Consistory of Pius XII's reign was held on December 11 but was confined to the naming of bishops. In his first Christmas address to the Sacred College, Pius XII listed five fundamental points of a "just and honorable peace":

That "the right to life and independence" be guaranteed to all nations; "large, small, strong or weak"; and that where this equality of rights has been destroyed, just reparation be made.

That nations be "liberated from the heavy slavery of armaments" and the danger of the rule of force.

That international institutions be established or reconstructed, but that past errors be avoided, and juridical bodies be formed to aid in carrying out of treaties and, if necessary, revising them.

That the needs and just demands of nations, peoples, and ethnical minorities be met.

Observance of true Christian principles by statesmen and peoples.

At the conclusion of his talk, the Holy Father announced the receipt of President Roosevelt's

message advising that he was sending Myron C. Taylor to serve as the President's personal representative at the Vatican. An exchange of calls between the Pope and the King and Queen of Italy were significant events in December. King Victor Emmanuel had called upon Pius XI in 1930 on the signing of the Lateran Treaty; on December 21 both the King and Queen in all pomp visited the Vatican and thereafter, on December 28, the Pope visited the Quirinal, the first time since 1870 that a Pontiff has visited the Sovereigns of the Italian Kingdom.

No canonizations took place in 1939, but the canonizations of Blessed Mary of St. Euphrasia Pelletier, Foundress of the Sisters of the Good Shepherd, and Blessed Gemma Galgani were authorized and will take place in 1940. The first two beatifications in the reign of Pius XII were those of Blessed Emilie de Vialar, foundress of the Sisters of St. Joseph of the Apparition, on June 18, and of Blessed Justin de Jacobis, a missionary bishop, on June 25.

For the first time since the Reformation an Apostolic Delegate, Most Rev. William Godfrey, was assigned to London. Relations between Italy and the Holy See continued most encouraging. The relentless systematic persecution of the Catholic Church in Germany and its annexed territories increased in 1939. Uruguay resumed diplomatic relations with the Holy See for the first time since 1898. The following countries now maintain diplomatic representatives at the Vatican: Argentina, Belgium, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, Estonia, France, Germany, Great Britain, Guatemala, Haiti, Honduras, Hungary, Ireland, Italy, Latvia, Liberia, Lithuania, Luxemburg, Monaco, Nicaragua, Panama, Peru, Poland, Portugal, Rumania, Salvador, San Marino, Santo Domingo, Slovakia, Spain, Uruguay, Venezuela, and Yugoslavia.

The Cardinals. No new Cardinals were created in 1939. Deaths reduced the Sacred College to 57, 13 short of its full complement. Alexander Cardinal Kakowski, Archbishop of Warsaw died Jan. 2, 1939 at the age of 76. He was known for his sound patriotism and ecclesiastical labor and for the fact that Pope Pius XI had received episcopal consecration at his hands. Leo Cardinal de Skrbensky-Hrste, Archbishop of Prague died at the age of 76. Domenico Cardinal Mariana, newly appointed by Pope Pius XII as one of three commissioners to administer the Goods of the Holy See, died April 23. Donato Cardinal Sbaretta, formerly archbishop of Havana and vice-dean of the Sacred College of Cardinals, died March 31 at 83. George Cardinal Mundelein, archbishop of Chicago, died October 2 at 67 (q.v.).

The Hierarchy. The following episcopal appointments were made during the year: Rev. Walter Fitzgerald, S.J., was named Coadjutor-Bishop of Alaska; Rev. Theodore Subr, O.S.B., titular Bishop of Balicio and Vicar Apostolic of Denmark; Rev. William A. Rice, S.J., Vicar Apostolic of Belize, British Honduras; Rev. Richard J. Cushing, titular Bishop of Mela and Auxiliary Bishop of Boston; Very Rev. William O. Brady, Bishop of Sioux Falls; Rev. A. C. Barneschi, first Vicar Apostolic of Swaziland; Msgr. William J. Condon, Bishop of Great Falls, Mont.; Rev. Donald A. Campbell, Bishop of Argyll and the Isles; Most Rev. Joseph Schrembs, Bishop of Cleveland was raised to an Archbishop's rank although the diocese was not made an archdiocese; Most Rev. Edwin V. O'Hara, Bishop of Great

Falls, was made Bishop of Kansas City; Most Rev. Francis J. Spellman, Auxiliary Bishop of Boston, was named Archbishop of New York; Most Rev. Francis J. Monaghan, Coadjutor Bishop of Ogdensburg, N. Y., was raised to the full bishopric; Most Rev. Jose Manriquez y Zarata resigned as Bishop of Huejutla, Mexico, and was named titular Bishop of Verbe; Rev. Louis LaRavoire Morrow, S.C., Bishop of Krishnagar, India; Rev. William F. O'Shea, M.M., Vice Apostolic of Heijo, Korea; Rev. Thomas Thien, S.V.D., Vicar Apostolic of Yanghu, China; Rev. Rocco Agniswami, S.J., Bishop of Kattar, India; Rev. John Larregain, Vicar Apostolic of Yunnanfu, China; Rev. Blaise S. Kruz, O.F.M., Vicar Apostolic of Kokstad, S. Africa; Rev. Urban Morlion, Coadjutor to Vicar Apostolic of Baudouinville, Belgian Congo; Rev. Henry Martin Mekkelholt, Vicar Apostolic of Palembang, Dutch E. Indies; Rev. Benedict F. Cialeo, O.P., Bishop of Multan, India; Rev. James Colbert, Vicar Apostolic of Pt. Elizabeth, S. Africa. Most Rev. Alexander Vachon, titular Archbishop of Acrida and Coadjutor Archbishop of Ottawa; Most Rev. Gabriel Joseph Elie Breynat, O.M.I., Vicar Apostolic of Mackenzie, named titular Archbishop of Garella; Rev. Arthur Douville, titular Bishop of Vito and Auxiliary Bishop of St. Hyacinthe, Canada; Rt. Rev. Msgr. Albert Lewis Fletcher, Auxiliary Bishop of Little Rock; Most Rev. Francis J. Spellman, Archbishop of New York, appointed Bishop Ordinary of the diocese of the U.S. Army and Navy, and Very Rev. John F. O'Hara, C.S.C., Auxiliary Bishop; Most Rev. Vincent Wehrle, O.S.B., resigned Bishop of Bismarck, named titular Bishop of Teos; Most Rev. Michael J. Curley, Archbishop of Baltimore, also named Archbishop of Washington, D. C.

The following bishops died in 1939: Most Rev. Thomas Lillis, of Kansas City; Most Rev. Joseph H. Conroy of Ogdensburg; Most Rev. Bernard J. Mahoney of Sioux Falls; Most Rev. Tihamer Toth of Veszprem, Hungary; Most Rev. August John Schwertner of Wichita, Kan.; Most Rev. Laurence Youens of Northampton, England; Most Rev. Francis Joseph Mostyn, of Cardiff, Wales; Most Rev. Alban Goodier, S.J., titular Bishop of Hierapolis; Most Rev. Alexis Lemaître, Archbishop of Carthage and Tunis and Primate of Africa; Most Rev. Timothy Corbett, titular Bishop of Vita and retired Bishop of Crookston, Minn.; Most Rev. Joseph A. Murphy, S.J., Vicar Apostolic of Belize; Most Rev. Paul Bruchesi, Archbishop of Montreal; Most Rev. Joseph A. Murphy, retired Vicar Apostolic of British Honduras; Most Rev. Thomas Gilmartin, Archbishop of Tuam, Ireland.

Statistics. The total Catholic world population is approximately 350,000,000 or about 19 per cent of all. Figures compiled by the Official Catholic Directory for 1939 lists the Catholic population of the United States at 21,406,507, a decrease of 44,853. The number of converts was 65,943 or 3247 more than in the previous year. The hierarchy numbers 19 Archbishops, 2 of whom are Cardinals, and 111 Bishops. The secular priests number 22,569, an increase of 524 over 1938; and the priests of religious orders number 10,971, an increase of 348. The churches total 18,757, an increase of 329, and include 13,114 churches with resident pastors and 5643 missions with churches. The number of seminaries increased by three, the total being 209; and the seminarians increased by 762, the total being 16,746. There are 181 colleges

for boys, a decrease of 5. Colleges and academies for girls total 677, an increase of 2. There are 1362 high schools, 56 more than in 1938, with a total attendance of 441,273, a gain of 34,252. The number of parochial schools is 7561, an increase of 133, and an attendance of 2,106,970, an increase of 5594. The number of orphanages is 311, a decrease of 15, and the number of orphans cared for was 33,206, or 3339 less than in 1938. There are 167 homes for the aged poor, a decrease of 1; and 679 hospitals, a decrease of 5, with 412 nursing schools. Catholic chaplains attached to the U.S. Army number 31; to the Navy, 19; with 67 assigned to veteran hospitals. There are 64 chaplains assigned to the National Guard; and 24 Auxiliary and 212 Military Reserve chaplains.

See AUSTRIA, GERMANY, ITALY, SPAIN under *History*; VATICAN CITY; CATHOLIC WELFARE CONFERENCE, NATIONAL.

JOHN GILLAND BRUNINI.

ROME-BERLIN AXIS. See GERMANY and ITALY under *History*.

ROOSEVELT, FRANKLIN D. See UNITED STATES; ROOSEVELT LIBRARY.

ROOSEVELT LIBRARY. In December, 1938, President Roosevelt announced his intention of donating to the Federal government his collection of historical material, together with a tract of twelve acres at Hyde Park, N. Y., as the site for a permanent repository. In making the gift, the President announced that his entire Hyde Park estate, including the family residence and about 100 acres of ground, would also revert to the government upon his death. The gift was accepted by an act of Congress, approved July 18, 1939, which pledged the United States to provide upkeep and operating expenses after the completion of the repository, to be erected with publicly subscribed funds. The Library will be administered by a board of trustees, consisting of the National Archivist as chairman, the Secretary of the Treasury as ex officio member, and five other members to be appointed by the President for life.

In the Roosevelt collection are more than 6,000,000 documents and manuscripts, some 15,000 books, a valuable naval collection, and numerous historical documents relating to the Hudson River Valley region. It includes all Mr. Roosevelt's correspondence over a period of 28 years, including his terms of office as senator and governor of New York State, Assistant Secretary of the Navy, and President. A non-profit organization known as the Franklin D. Roosevelt Library, Incorporated, undertook to solicit the building fund, toward which Mr. Roosevelt donated the net proceeds received from his writings. The building plans provided for a one and one-half story building of Dutch colonial design, to be erected at a cost of \$350,000. On Nov. 19, 1939, the cornerstone was laid by President F. D. Roosevelt.

ROSE ISLAND. An island of the central Pacific (approximately 14½° S. and 168° W.), included in American Samoa. The Naval Appropriations Bill of 1939 provided for the establishment of a naval air base on the island. See *American Samoa* under SAMOA.

ROSICRUCIAN ORDER. An international, philosophical fraternity, known as the Ancient, Mystical Order Rosae Crucis, whose name is derived from the emblem—a cross with a single rose in the centre—adopted by Johann Valentine Andrea, erroneously regarded as the restorer of

the Order in Germany in the Seventeenth Century. In 1939, the Order in North and South America had 13 lodges, 100 local chapters, and 3 colleges combined as the Rose-Croix University.

In June of 1939, it erected a large building of Egyptian design, which was dedicated as the Rosicrucian Research Library. The library houses several thousand volumes, specializing in works concerning art, philosophy, science, history, and alchemy. The library is not only made available to the students of the Rose-Croix University, but, by a unique method, members of the A.M.O.R.C. The structure also houses classrooms and a research biology laboratory.

The Rosicrucian Egyptian, Oriental Museum has, during the year 1939, greatly added to its collection, and as a result it is now recognized by the American Association of Museums, of which it is a member, as having the largest collection of Egyptian antiquities in Western America. Its annual attendance increased 40 per cent, or several thousand visitors, due to the increasing number of visiting college and school classes. The Rose-Croix Research Institute and Sanitarium, dedicated in January, 1939, in San Jose, California, augmented its staff and increased its patient capacity.

Dr. H. Spencer Lewis, Imperator or Chief Executive of the Order for North and South America, and the one who re-established the work of the Order in America in 1915, died Aug. 2, 1939. By traditional transmission of authority from his predecessor, and election by the Board of Directors of the Supreme Grand Lodge, Ralph M. Lewis, son of H. Spencer Lewis and former Supreme Secretary for sixteen years, was made the Order's Imperator.

ROSS DEPENDENCY. The area in the Antarctic comprising the coasts of the Ross Sea—with the adjacent islands and territories south of 60° S. and between 160° E. and 150° W., proclaimed a British Settlement and placed (by Order in Council, July 30, 1923) under the administration of the governor-general of New Zealand.

ROSS (RUBY) DAM. See DAMS.

ROTARY INTERNATIONAL. Rotary undertakes to inspire men to realize fully their individual capacity for patriotic citizenship in their states and nations; to deal justly with their customers or clients, their employees, and others with whom they may have business or professional relations; to have concern for the welfare of their neighbors; and, individually and through their association in Rotary clubs, to bring about international understanding, good will, and peace.

The 30th annual convention of Rotary International was held June 19 to 23, 1939, in Cleveland, Ohio. There were approximately 9200 Rotarians and members of their families present representing Rotary clubs in 54 geographical regions. Officers elected for 1939-40 are: President: Walter D. Head, Montclair, N. J.; Vice Presidents, T. A. Warren, Wolverhampton, England; G. Ramirez Brown, Managua, Nicaragua; Frank Phillips, Ithaca, N. Y.; Secretary, Chesley R. Perry; Treasurer, Rufus F. Chapin. The 1940 convention will be held in Rio de Janeiro, Brazil, June 9 to 15.

On Dec. 1, 1939, Rotary International consisted of 5020 clubs with an approximate membership of 210,000. There were 3198 clubs in the United States, 155 in Canada, 485 in Great Britain and

Ireland, and 1182 in other parts of the world. The International secretariat is at 35 East Wacker Drive, Chicago.

ROUMANIA. See RUMANIA.

ROWING. See SPORTS.

RUANDA-URUNDI. See CONGO, BELGIAN.

RUBBER. The year of 1939 was of special interest in and to the rubber industry in that it marked the one hundredth anniversary of the discovery of vulcanization by Charles Goodyear. Suitable ceremonies commemorating this historic achievement were held in Akron, Ohio, and in Boston and Woburn, Mass. It was in Woburn that the inventor finally discovered that rubber and sulphur combine with the application of heat. The ceremonies in Boston were part of the 98th Meeting of the American Chemical Society in September. See CHEMISTRY, INDUSTRIAL.

WORLD CONSUMPTION OF CRUDE RUBBER—1939
[All Figures in Long Tons]

Month	United States	United Kingdom	All Other	Total
Jan.	46,234	7,285	23,781	77,300
Feb.	42,365	10,075	37,760	90,200
Mar.	50,165	11,309	39,626	101,100
Apr.	44,166	8,086	42,428	95,400
May	44,377	10,228	41,995	96,600
June	47,259	10,561	32,430	90,250
July	43,880	10,579	29,041	83,500
Aug.	50,481	14,251	24,618	89,350
Sept.	50,150	9,964	22,886	83,000
Oct.	55,764	10,860	27,376	94,000
Nov.	54,322	11,270	23,408	89,000
Dec.	48,428	12,000*	27,572*	88,000*
Total.	577,591	126,468*	373,641*	1,077,700*

* Estimated. Sources: Rubber Manufacturers Association; W. H. Rickinson & Son.

A distinct contribution to rubber manufacturing methods, one which will ease the burden of mold costs, was the perfection during the year of an electroforming method of making molds by engineers of the United States Rubber Co. at its Detroit plant. Known as the Ekko Process, it produces molds and dies by electroforming iron against a pattern, not necessarily rubber. The major difference between this method and ordinary electro-plating methods is that deposits up to 1/2-inch thickness are built up in the Ekko Process as compared to the 1/1000ths to 2/1000ths of an inch in the electro-plating processes.

WORLD'S RUBBER SHIPMENTS—1939
[All Figures in Long Tons]

Month	British Malaya	Netherlands Indies	Other Plantation	Total Plantation	Total Other	Grand Total
Jan.	24,283	38,651	20,103	83,037	2,270	85,307
Feb.	29,195	24,961	19,176	73,332	2,730	76,062
Mar.	29,224	27,881	18,027	75,132	2,655	77,787
Apr.	29,672	28,311	15,286	73,269	3,570	76,839
May	29,517	24,388	15,685	69,590	3,170	72,760
June	21,974	27,959	13,801	63,734	3,095	67,829
July	25,910	35,727	14,208	75,845	2,470	78,315
Aug.	40,862	27,357	21,252	89,471	3,035	92,506
Sept.	26,792	37,703	20,040	84,535	3,235	87,770
Oct.	29,346	44,800	17,700	111,846	2,820	114,666
Nov.	35,619	30,300	16,135	82,054	3,160	85,214
Dec.	30,000*	30,000*	17,000*	82,000*	3,000*	85,000*
Total	372,394*	378,038*	208,413*	958,845*	35,210*	994,055*

* Estimated. Source: W. H. Rickinson & Son.

An example of the savings inherent in the new process is presented by electroformed tire molds. Duplicate molds made by standard methods, that is, by cutting the tread design out of a steel forging with special engraving machines, take

the same approximate 165 man-hours that original molds take. With the Ekko Process, operatives insert a spacer ring between two halves of a master model, prepared by standard engraving methods, and mold a tire whose cross-section is about ¼-inch thicker than a standard tire. The cast tire is then brushed with a light coating of graphite to make its surface conductive to electricity and is immersed in the electroforming bath and the current turned on.

WORLD STOCKS OF CRUDE RUBBER DURING 1939

[At the Three Main Centers] [All Figures in Long Tons]

At End of	United States	United Kingdom	Singapore, Penang, etc.	Total
Jan.	223,879	80,209	34,136	338,224
Feb.	217,534	75,096	31,125	323,755
Mar.	205,936	71,764	25,146	302,846
Apr.	190,896	68,502	24,298	283,696
May.	193,602	65,665	22,642	281,909
June.	181,794	63,550	21,224	266,568
July.	174,240	56,888	29,809	260,937
Aug.	161,362	44,581	22,849	228,792
Sept.	150,171	40,000*	26,196	216,367*
Oct.	133,183	37,000*	27,871	198,054*
Nov.	118,535	39,000*	24,785	182,320*
Dec.	138,017	44,000*	25,000*	207,017*

* Estimated. Sources: Department of Commerce; Rubber Manufacturers Association; W. H. Rickinson & Son.

Without further attention, other than occasional routine inspection, the duplicate mold forms itself around the model. After 10 or 12 days of continuous plating, during which the ½-inch coat of iron is built up, the resulting mold is sawed in half, the extra thickness provided by the spacer ring allowing plenty of room for machining the duplicate mold halves to the original dimensions of the master. Actual man-hours of labor for duplicating the mold are only a fraction of the former 165 man-hours required. Although pioneered for use in connection with rubber molds, the Ekko Process has already been adapted to such widely diversified industries as plastics, glass, and metal stamping.

RECLAIMED RUBBER IN THE U.S.—1939

[All Quantities in Long Tons]

Month	Production	Tons	% to Crude	Stocks*
Jan.	14,826	13,743	29.7	23,334
Feb.	14,102	13,347	31.5	23,461
Mar.	15,647	16,197	32.3	22,155
Apr.	14,527	13,391	30.3	22,628
May.	14,769	13,517	30.5	22,771
June.	15,871	14,870	31.4	23,058
July.	12,588	13,542	30.9	21,339
Aug.	17,595	16,848	33.4	21,024
Sept.	17,990	16,953	33.8	21,185
Oct.	20,896	18,955	34.0	21,829
Nov.	20,755	18,006	33.2	21,362
Dec.	19,249	15,575	32.2	25,427
Total...	198,815	184,942	32.0	25,427

* At end of month or year. Source: Rubber Manufacturers Association.

Whereas tires and tubes formerly accounted for 85 to 90 per cent of all crude rubber consumed in the United States, this branch of the industry has steadily been losing some of its percentage advantage to other branches in recent years, although still far the larger proportion of consumption. This trend continued throughout 1939. Expanded uses of rubber in the automotive and other fields, particularly those absorbing mechanical rubber goods, contributed largely to this changing picture.

For instance, at the 1938 Automobile Show only one car, Hudson, featured latex foam cushioning for seats as standard equipment, while

such seats were optional on one or two other cars. At the 1939 show, however, 15 of the 19 American makes on exhibition were equipped with this new type of seat cushion, including all of the General Motors models with the exception of Chevrolet. Dunlop, holder of the basic patent, Firestone, Goodrich, Goodyear, and U.S. Rubber are all making latex foam cushioning material, from which mattresses and upholstery are made, as well as seat cushions. While each company designates its material with a special brand name, they are all made by a similar process in which the latex is virtually whipped until it forms millions of minute air-filled cells which give exceptional buoyance to the finished vulcanized material.

Definite advances were recorded in the use of rubber in another branch of the transportation field. A new streamlined, air-conditioned subway car, literally cushioned on rubber, made its appearance on one of New York City's subway lines. This car utilizes both rubber "sandwiches" and rubber springs, developments of the B. F. Goodrich Co. of Akron, Ohio. The "sandwiches" are made of rubber 1½ inches thick and are placed between the steel tires which run on the rails and the wheels themselves. They dampen out shocks imparted to the wheel by rail joints, switches, and other roadbed equipment.

An interesting method of packing meatstuffs in rubber was developed during the year by the Dewey and Almy Chemical Co. of Cambridge, Mass. The method embraces the use of "Cryovac" wraps, made from specially compounded latex so as to be completely odorless, impart no taste, and absolutely moisture and vapor-proof. In its original form the wrap resembles a deflated, wide-mouthed balloon. In use the "Cryovac" wrap is inserted in a container in the deflated position. It is then expanded with air and a vacuum is drawn around the outside of the container. Thus, the wrap takes the shape of the container while the chilled sides "freeze" it into expanded size. Into this "frozen" package a chicken or side of beef or other meatstuff is placed, following which a vacuum hose removes the inside air and draws the wrap close to the solid. The neck of the wrap

CRUDE RUBBER CONSUMED IN PRODUCTS MANUFACTURED IN THE U.S.

[All Figures in Long Tons]

Products	First Nine Months 1939	1938
Pneumatic Casings*	204,649	139,132
Pneumatic Tubes*	30,038	21,515
Bicycle Tires*	1,917	1,189
Airplane Tires & Tubes	191	158
Solid & Cushion Tires	406	336
Tire Sundries & Repair Materials	7,793	5,839
Mechanical Rubber Goods	27,381	17,872
Boots and Shoes	11,365	9,033
Insulated Wire & Cables	3,871	3,612
Drug Sundries & Surgical Goods	2,786	1,827
Stationers' Rubber Goods	1,569	1,265
Bathing Apparel	494	409
Miscellaneous Sundries	2,519	1,420
Rubber Clothing	409	316
Automobile Fabrics	190	286
Other Rubberized Fabrics	2,965	2,582
Hard Rubber Goods	1,877	1,208
Heels and Soles	9,694	7,098
Rubber Flooring	821	606
Industrial Sponge Rubber	3,126	1,634
Sporting Goods, Toys & Novelties	1,658	1,318
Grand Total...	315,719	218,655

* All types, except bicycle and airplane. * All types except bicycle and airplane. * Including juvenile pneumatics. Source: Rubber Manufacturers Association. The grand total is estimated to be 75% correct with regard to completeness.

is then twisted and clamped to make the package thoroughly air-tight and vapor-proof. The completed package is next immersed in warm water, the effect of which is to "thaw" the "frozen" rubber so that the wrap attempts to shrink to its original size, thus forming a taut, transparent wrap around the inner object. Shrinkage, the bane of the meat packing industry, is said to be minimized with this method.

Expansion activities were common in the industry during 1939, indicative of improved positions generally. Chief among construction work was the erection of a tire factory by the Armstrong Tire & Rubber Co. at Natchez, Miss. This factory, in which Sears, Roebuck & Co. has a financial interest, is expected to supply all Sears' southern stores with their tire requirements. The Bata Shoe Co. which has had distributing centers in various parts of the United States for several years, finally began the construction of an oft-rumored shoe factory at Belcamp, Md. One unit of this plant is already in operation, and rubber footwear is being made.

M. E. LERNER.

RUMANIA. A monarchy of southeastern Europe. Capital, Bucharest. Sovereign in 1939, Carol II, who was proclaimed King on June 8, 1930.

Area and Population. Rumania has an area of 113,887 square miles, as compared with 60,643 square miles before the World War. The estimated population on Jan. 1, 1939, was 19,852,000 (17,888,992 at the 1930 census). About 81.6 per cent of the population is rural and 18.4 per cent urban. Living births in 1938 numbered 585,197 (29.6 per 1000); deaths, 379,282 (19.2 per 1000); marriages, 173,639 (8.8 per 1000). Estimated populations of the chief cities on Jan. 1, 1937, were: București (Bucharest), 643,293; Chisinău (Kishinev), 114,101; Cernăuți (Czernowitz), 110,357; Iași (Jassy), 104,541; Galati (Galatz), 102,349; Cluj (Klausenburg), 99,546; Timișoara (Temeswar), 90,177; Oradea-Mare (Grosswardein), 81,181; Ploesti, 77,000; Arad, 75,143; and Brăila, 68,817.

National Defense. Military service is compulsory. On Nov. 1, 1939, the army consisted of 800,000 active soldiers and 1,000,000 trained reserves, according to the Adjutant General's Office, Washington, D. C. The air force comprised 15,472 men and more than 800 aircraft. The Black Sea naval squadron included 4 destroyers, 1 submarine, 3 ex-Austrian torpedo boats, 4 motor gunboats, and a depot ship. Several river craft patrol the Danube. See MILITARY PROGRESS.

Education and Religion. School enrollment in 1936-37 was: Primary, 2,480,091; secondary, 190,272; university, 34,093 (see EDUCATION). There were in Rumania in 1934 about 13,300,000 members of the Orthodox Church, 1,800,000 Greek Catholics, 1,200,000 Roman Catholics, 900,000 Jews, 720,000 Reformists, 400,000 Lutherans, 260,000 Moslems, 75,000 Unitarians, and 140,000 others.

Production. About three-fourths of the population is engaged in agriculture. In 1937 there were 34,448,000 acres of arable land (47.3 per cent). Yields of the principal cereals in 1939 were (in metric tons): Wheat, 4,488,600; barley, 1,005,600; rye, 474,500; oats, 475,900; corn, 6,239,400. The output of other crops in 1938 was: Potatoes, 61,157,000 bu.; sugar beets, 731,000 metric tons; beet sugar (1938-39 season), 167,000 metric tons; wine, 260,000,000 gal.; tobacco, 27,207,000 lb.; alfalfa

and clover, 1,196,000 metric tons. Livestock statistics for 1937 showed 4,184,000 cattle; 12,373,000 sheep; 3,170,000 swine; 408,000 goats; 2,083,000 horses, mules, and asses; and 185,000 buffaloes.

Mine and factory production (in metric tons) in 1938 was: Petroleum, 6,603,000; lignite, 2,084,000; coal, 297,000; salt, 370,000; rayon, 842; paper, 67,000. Output of petroleum in 1939 was 47,476,000 bbl.; of salt, 779,467,000 lb.; of gold, 155,767 troy oz. In 1937, iron ore production was 129,060 metric tons; pig iron, 127,234 metric tons; natural gas, 87,678,000,000 cu. ft. Total national income in 1937 was 295,000,000,000 lei.

Foreign Trade. Imports were valued at 18,768,000,000 lei in 1938 (22,896,000,000 in 1939) and exports at 21,527,500,000 lei (26,808,000,000 in 1939). In 1937 the value of imports from Germany was 5,333,000,000 lei; Austria, 1,842,000,000; Czecho-Slovakia, 1,806,000,000; United Kingdom, 1,780,000,000; France, 1,175,000,000; Italy, 794,000,000. Exports to Germany were valued at 6,208,000,000 lei; United Kingdom, 2,795,000,000; Czecho-Slovakia, 2,587,000,000; Italy, 2,285,000,000; Austria, 2,201,000,000; France, 1,834,000,000. See IMPORTS AND EXPORTS.

Finance. Budget returns for the fiscal years ended March 31 were: Ordinary receipts, 27,601,000,000 in 1937-38 (31,675,000,000 in 1938-39); ordinary expenditures, 26,643,000,000 in 1937-38 (30,304,000,000 in 1938-39). For 1939-40 the ordinary budget estimates balanced at 32,229,000,000 lei. Annexed to the ordinary budget for 1939-40, but not included in the totals, is the budget of special funds, with revenues and expenditures balanced at 1,436,000,000 lei. The budget for the army for 1939-40 amounted to 7,704,000,000 lei. No details of actual extraordinary receipts and expenditures are available. The public debt on Apr. 1, 1939, was 104,127,400,000 lei. The nominal average exchange value of the leu (singular of lei) was \$0.0073 for both 1937 and 1938, and \$0.0071 for 1939.

Transportation. Rumania has more than 7000 miles of railway line and the freight carried in 1938 totaled 2,935,000,000 ton-miles. Highways in 1939 extended 61,794 miles (see ROADS AND STREETS). Planes of the Rumanian state air line flew 727,531 miles in 1938, and carried 32,313 passengers. On June 30, 1938, the Rumanian merchant marine consisted of 33 vessels (of 100 tons or more) aggregating 101,337 tons.

Government. Under the Constitution of Feb. 27, 1938, Rumania became a corporate state with the dictatorial powers vested in the King. Responsible parliamentary government was abolished, the old parties dissolved, and the Front of National Regeneration established as the only official party, controlling all candidates and voters. There is a Chamber of Deputies of 258 members elected for six years on an occupational basis and a Senate of 176 members—half elected and half appointed or serving *ex-officio*. See 1938 YEAR BOOK, p. 661, for details of Constitution.

HISTORY

Throughout 1939 Rumania lived in imminent danger of invasion and dismemberment by a ring of hostile nations covetous of her territories and natural wealth (see the accompanying map). Within the kingdom the numerous minority groups (also shown on the map) and the pro-Nazi Iron Guard movement strove unceasingly to undermine and destroy King Carol's semi-feudal regime. By adroit fencing with the great powers and ruthless repression of internal enemies Carol managed to

A MINORITIES MAP OF RUMANIA



Courtesy of New York Times

keep his shaky kingdom intact and to enter 1940 with at least some hope of its survival.

Pressure from Berlin. The Czecho-Slovak bastion barring a Nazi advance into Rumania had been shattered by the Munich Accord of Sept. 29, 1938. With the collapse of Czech military power, the Little Entente alliances, designed to block Hungary's territorial claims on Rumania, Czecho-Slovakia, and Yugoslavia likewise lost most of their effectiveness. Nevertheless King Carol in the last months of 1938 and early in 1939 offered vigorous opposition to German diplomatic pressure and intrigues within his kingdom (see 1938 YEAR Book, p. 662).

German intimations that Carol's regime was doomed because of this opposition appeared to be on the point of realization in March. Early that month a German delegation arrived in Bucharest seeking far-reaching economic concessions. At the same time the German, Hungarian, and Bulgarian minorities in Rumania, whose revisionist aspirations had been stirred by the Munich Accord and later deliberately fanned by the German, Hungarian, and Bulgarian governments, respectively, demanded political autonomy and other special privileges.

The demands upon Bucharest were given threatening emphasis by the destruction of Czecho-Slovakia on March 15 and the massing of Hungarian troops along the Rumanian border following Hungary's seizure of Ruthenia. Carol mobilized troops to meet the threatened Hungarian invasion, but

his poorly equipped army was more than ever dependent upon arms and munitions from the giant Skoda arms factory in Czecho-Slovakia, now in German hands. When the Germans threatened to prevent further arms shipments to Rumania, the King capitulated in part to German demands for a monopoly of Rumanian trade.

On March 23 a German-Rumanian economic accord was signed under which Rumania agreed to increase its trade with the Reich, adjust its production to German needs, and permit German capital and German technical experts to exploit Rumanian petroleum and other minerals as well as to develop the kingdom's transportation facilities. In return Berlin agreed to sell Bucharest war materials and give technical aid in certain farm processing industries. There was an immediate influx of German technicians, engineers, and diplomats, but they met what appeared to be calculated non-co-operation from the Rumanian Government. The extension of German economic control over Rumanian resources did not proceed according to the Nazi schedule.

Anglo-French Guarantee. In fending off German economic control, King Carol obtained important support from Britain and France, then in process of organizing their "stop-Hitler" front. On April 13 they promised Rumania all military aid in their power if its independence was threatened by the Reich and the Bucharest Government decided to fight. This pledge was unilateral, imposing no obligation upon Rumania. Moreover it

was followed on May 11 by an Anglo-Rumanian economic pact under which Bucharest received a £5,000,000 credit for the purchase of British goods. France also gave Bucharest substantial economic concessions to lessen its dependence upon the German market, and in July another British arms credit was granted.

Rumanian Neutrality. The effort to enlist Rumania definitely in the Anglo-French military combination received a sharp setback through the conclusion of the German-Soviet non-aggression pact of August 24, insuring the Soviet Union's neutrality in the ensuing European War. On August 23, after preliminary announcement of the Nazi-Soviet pact, the Rumanian Foreign Office announced that the kingdom would remain neutral in any European conflict unless attacked. Fearful of sharing the fate of Czecho-Slovakia and Poland, the Bucharest Government forbade the transit of arms, war materials, and troops across its territory to either side, thus completely blocking the sole avenue available for Anglo-French assistance to the Poles.

When the Polish Government and thousands of defeated troops fled into Rumania during the third week of September, the leading officials and officers were interned upon the demand of the German Government, despite appeals from Britain and France for their release. Late in the year, however, ex-President Moscicki and certain other important Polish leaders were permitted to leave, while others remained in Rumanian custody for the duration of the war. The thousands of Polish refugees who entered Rumania along with the Polish troops imposed a serious burden upon the Rumanian Government and people.

German-Allied Struggle in Rumania. With the partition of Poland and the failure of efforts to end the war between Britain, France, and Germany, Rumania became the focus of an even more intense diplomatic, economic, and financial warfare between the belligerents. Deprived of overseas supplies by the Allied blockade, the Reich brought every form of pressure short of actual military invasion to bear upon Rumania to secure increased shipments of oil and other vital war supplies. The Allies, on the other hand, bought up large quantities of Rumanian products to prevent them from going to the Reich, and used their financial control over Rumanian oil and other resources, and the threat of blockade, to force Rumanian compliance with their plans. On December 21 Germany scored a triumph by concluding a new agreement with Bucharest after protracted negotiation. This accord raised the value of the mark nearly one-quarter as compared with the leu, thus making it cheaper for the Reich to buy Rumanian products. It also provided for an increase of Rumanian oil shipments to Germany to 130,000 tons monthly. The Allies, in turn, demanded compensatory advantages. The year ended with this competition becoming ever more intense and threatening to give way to military pressure.

The Soviet Menace. While playing Germany and the Allies off against one another, King Carol was obliged to face an even greater threat of aggression from the Soviet Union. Rumanian fortifications and troop concentrations previously had been concentrated largely along the Hungarian and Bulgarian frontiers. But early in September there were reports of heavy Soviet troop movements near the Bessarabian frontier. King Carol began to strengthen his defenses against a Russian invasion, while seeking assurances of Moscow's inten-

tions. He also made overtures for Italian aid in countering the Soviet menace.

In mid-November King Carol's fear of Russian invasion of Bessarabia was so great that he withdrew his troops from the frontier to more defensible positions. On December 6 the official organ of the Communist International at Moscow called for immediate conclusion of a Soviet-Rumanian accord similar to those imposed on the Baltic states. But this alarming statement was disavowed by the Soviet Foreign Office when the proposal met with Rumanian and other foreign resistance. On December 23 it was reported that the Bucharest Government, encouraged by Russian difficulties in Finland, had decided to reject any and all Soviet claims for Rumanian territory.

Relations with Other Neighbors. King Carol adopted the same attitude toward Bulgarian and Hungarian territorial claims. He acted on the presumption that if one of these claimants obtained territorial satisfaction, it would be the signal for the partition of Rumania by all three. This refusal to consider any territorial concessions was partly responsible for the collapse of Italian and Yugoslav efforts to build a neutral bloc of Danubian and Balkan powers to resist pressure from Germany and Russia alike. Hungary's refusal to moderate her territorial claims upon Rumania was another important factor.

When Hungary rejected a Yugoslav-Rumanian proposal for a non-aggression pact, the Rumanian Government turned to Turkey, Greece, and Yugoslavia, its partners in the Balkan Entente (q.v.), and sought to induce them to extend the Balkan defensive alliances to apply in case of attack from any source whatever. This move was favorably received in Turkey, but Greece and Yugoslavia remained non-committal or opposed. Meanwhile King Carol was busily engaged in strengthening his army and constructing lines of fortifications along the Bulgarian, Hungarian, and Soviet borders. Some 800,000 men were under arms at the year end.

Internal Affairs. Political developments in Rumania during the year reflected King Carol's struggle against his foreign and domestic foes. He steadily strengthened his Fascist-like regime in order to undermine the political appeal of the Iron Guard's Nazi doctrines and to stiffen Rumanian resistance to German and other foreign pressure. Minister of Interior Armand Calinescu, a leading supporter of the King in the establishment of his authoritarian regime and in his war with the Iron Guard, was named Vice Premier and acting Minister of Defense on February 2. On February 13 scores of Iron Guard members were arrested following discovery of a plot to assassinate him. When Premier Miron Cristea (q.v.) died shortly afterwards, Calinescu succeeded him as head of the Cabinet (March 7).

The Calinescu Government further relaxed the anti-Semitic measures instituted by the Goga Government in 1938. There was a marked improvement in commerce and industry. On June 1-2 the elective members of the new corporative Parliament were chosen. The Parliament, deprived of all except advisory functions, assembled on June 8 in time to join in the celebration of the ninth anniversary of Carol's return from exile. His all-inclusive dictatorship was challenged, however, by some leaders of the former political parties. Vintila Bratianu of the former Liberal party, Dr. Iuliu Maniu, Ion Mihalache, and Nicolei Lupu of the former National Peasant party, and others were

ousted from the Senate on July 8 after they had refused to take the oath decreed for Senators and had declared their intention not to recognize laws passed by the new Parliament.

Calinescu Assassination. On September 21, during the crisis produced by the collapse of Poland, the Iron Guard made a new effort to overthrow King Carol's Government. Premier Calinescu was shot to death on a busy Bucharest street by a group of young men. They then seized the radio broadcasting station and announced the Premier's death as a signal for a nation-wide Iron Guard revolt. However the conspiracy was immediately crushed by the arrest of the assassins and hundreds of Iron Guard members. That evening nine of the assassins were taken to the scene of the crime and executed by troops at the King's orders, their bullet-shattered bodies being left in the street as a warning to their sympathizers. This was followed by wholesale executions of Iron Guard members in concentration camps and by numerous arrests of others suspected of Iron Guard membership or sympathies. Some reports placed the number of executions as high as 2000.

Governmental Changes. Immediately after Calinescu's assassination, the King named Gen. George Argeșeanu, commander of the Bucharest military district, as Premier. As soon as the Iron Guard menace was eliminated, Carol on September 28 appointed Constantin Argetoianu, president of the Senate and member of the Crown Council, as Premier of a reconstructed cabinet. His government, strictly neutral in its foreign policy, extended the powers and activities of the Front of National Regeneration and made a further effort to conciliate the minorities by extending additional rights.

The replacement of the Argetoianu Cabinet on November 24 by a ministry headed by George Tatarescu was the direct result of a speech made by Hungary's Foreign Minister, Count Stephen Csaky, reiterating Hungarian claims upon Rumania and stressing Hungary's friendly relations with Germany and Italy. The appointment of Tatarescu, well-known for his pro-French sympathies, represented a modification of Carol's policy of strict neutrality in favor of closer relations with the Allies.

Another event of the year was the coming of age of Crown Prince Michael on his 18th birthday (October 25). On November 25 Michael was sworn in as Rumania's youngest Senator.

See BULGARIA, CZECHO-SLOVAKIA, FRANCE, GERMANY, GREAT BRITAIN, GREECE, HUNGARY, ITALY, POLAND, TURKEY, UNION OF SOVIET SOCIALIST REPUBLICS, and YUGOSLAVIA under *History*; FASCISM; JEWS; MILITARY PROGRESS; NAVAL PROGRESS.

RUPPERT, JACOB. An American brewer and sportsman, died in New York, Jan. 13, 1939, where he was born, Aug. 5, 1867. Educated at the Columbia Grammar School, he intended entering the Columbia University School of Mines, but his father prevailed upon him to enter the brewing business. He became the manager of the Jacob Ruppert Brewery in 1888 and its president, succeeding his father, in 1896. Under his management the Company expanded and became one of the largest brewing houses in the country. He was president of the U.S. Brewers Association from 1911 to 1914 and again from 1922 to 1937, and was one of the founders, and first chairman, of the United Brewers Industrial Foundation in 1937.

A member of the 7th Regiment, he served with

the rank of colonel on the staffs of Governor Hill (1889-92) and of Governor Flower (1892-95) of New York. In 1899 he was a Democratic candidate for Congress. Elected, he served until 1907 when he refused to be a candidate for re-election.

A keen sportsman, Colonel Ruppert at one time kept a racing stable and a large kennel of St. Bernard dogs. In 1914, with Col. T. L. Huston, he purchased the New York Yankees, then called the Highlanders—a second rate ball club in the American League—for \$450,000, culminating a lifelong desire to own a baseball team. He made several attempts to purchase the New York Giants but was unsuccessful. With the acquisition of Miller Huggins as manager of the team in 1918, and Babe Ruth, whose phenomenal succession of home runs brought thousands to see him, in 1920, the fortunes of the club rose and the first pennant was won in 1921, although the first World Series was not won until 1923 when the Yankees beat the Giants. In 1923 Ruppert purchased Huston's share of the Yankees and in the same year the Yankee Stadium was opened. The Yankees, the Colonel's pride and joy, was the most successful baseball team in the history of the game, holding world championship from 1935 to 1939.

In 1933, Colonel Ruppert was one of the sponsors of the second Byrd Antarctic Expedition and the flagship was named in his honor. In recent years he had made extensive real estate investments and was believed to be one of the largest realty owners in New York City. He was president of the Astoria Silk Mills and a director of several other enterprises.

RURAL ELECTRIFICATION ADMINISTRATION. See ELECTRIC LIGHT AND POWER; AGRICULTURE.

RUSSELL SAGE FOUNDATION. This Foundation was created by Mrs. Sage as a memorial to her husband. The original endowment was \$10,000,000 to which \$5,000,000 was added by her will. The Foundation was established for the purpose of promoting the improvement of social and living conditions in the United States of America. Its charter provides that it may "use any means which from time to time shall seem expedient to its trustees, including research, publication, education, the establishment and maintenance of charitable and benevolent activities, agencies and institutions, and the aid of any such activities, agencies or institutions already established." Its general aim is the study of the causes of adverse social conditions in order to disseminate information which will be of assistance to citizens and organizations seeking to ameliorate, remedy or prevent such conditions.

It is the policy of the Foundation not to make grants to colleges, universities, local agencies, hospitals, or to religious institutions. It does not directly relieve either individual or family need.

While the Foundation is not primarily a contributing organization, it does make grants of approximately 40 per cent of its income, chiefly to agencies with similar purposes, and in fields where it is believed that a specific piece of work might be done better by an outside agency. Among the types of activities carried on by its Departments, or through such outside agencies financially assisted are adult education; city and regional research and planning; the improvement of housing; family welfare; education and training for social work; the study, co-ordination and planning of community social work programmes;

child welfare; placement and vocational service; leisure time activities; legal aid; penology and the prevention of delinquency; service to travelers and transients; social welfare publications; professional organization of social workers; improvement of race relations; research in the social sciences; and social phases of the arts.

The trustees and officers of the foundation are: Lawson Purdy, president; Morris Hadley, vice president and treasurer; John M. Glenn, secretary; Lindsay Bradford, Joseph P. Chamberlain, Harry Woodburn Chase, Johnston de Forest, Frederic A. Delano, John H. Finley, and Harold T. White. Shelby M. Harrison is general director.

RUSSIAN LITERATURE. In 1938, 28,361 books of all types, from scientific works to poetry, had been published in the country; judging by incomplete preliminary reports, the figure for 1939 was well over 31,000.

Fiction. If generalizations are permissible, the year's great mass of fiction was not very rich in literary skill and artistic quality.

Among the novels picturing the contemporary Russian life and "the new classless Socialist society", "Courage" (*Muzhestvo*), by V. Ketlinsky, and "The Ocean's Brother" (*Brat okeana*), by A. Kozhevnikov, won especially warm praise from Soviet reviewers. The first is the story of Soviet youths who, despite overwhelming difficulties, succeed in building an industrial plant in Siberia; their "Socialist enthusiasm for work" strikes one as exaggerated and artificial. The second, told in the form of the chronicle of a family of skippers on Enisey River, is, on the whole, forceful and effective. "Derbent", the Tanker" (*Tanker "Derbent"*), a novel by G. Krymov on a similar subject, also received much notice. In "High Pressure" (*Vysokoe davlenie*), L. Soloviov skilfully drew an interesting picture of "the new Soviet man"; luckily, this picture is free from the inartistic idealization which ruins many similar novels. "Two Captains" (*Dva kapitana*), by the talented V. Kaverin, contains a vivid portrayal of Russia's young generation. A trace has been left in fiction by Stalin's "great purge" with its trials and executions: conspiracies contrived by "wreckers" and "Trotzkysts" provide plots for a number of the year's novels. S. Guecht's "Edifying Story" (*Pouchitelnaia istoria*) and A. Mitrofanov's "Irene Godunov" (*Irina Godunova*) are among the more readable of such works.

Of the year's historical novels, quite a few are devoted to the Civil (Revolutionary) Wars of 1918-21, a subject for which Soviet authors have always had a strong predilection. In "Parkhomenko" (*Parkhomenko*), V. Ivanov produced a portrait of a hero of these wars and a panorama of the whole epoch; "This Began at Kokand" (*Eto nachalos v Kokande*) by N. Nikitin resurrects the same epoch as it had been lived in the picturesque Turkestan and Bokhara (Russian Central Asia). Both Ivanov and Nikitin are interesting authors; unfortunately, these are not the best of their works. Among historical novels treating other subjects, "Batash and Batai" (*Batash i Batai*), by I. Libedinsky, is probably the best one: it is a remarkably well-written and colorful story of pre-revolutionary Mohammedan nobility in the Caucasus. "The Fatal Book" (*Pagubnaia kniga*), an 18th century story by Mrs. O. Forsh, is also a good piece of work; its central figure is Radischev, an early Russian revolutionary thinker.

In most of the novels referred to in the foregoing, romance plays but a secondary part. The treatment of love and of human psychology unrelated to social problems in works of fiction and drama is no longer frowned upon in the Soviet Union as severely as it had been in former years. Yet Communist ideologists still regard sex for the sake of sex and "too much introspective subtlety" as subjects unworthy of the "Socialist society"; and it is these ideologists (with the Communist Party standing behind them) who are the autocratic lawmakers of Soviet literature.

Autobiography and Biography. A great success was enjoyed by Marina Raskov's "Notes of a Pilot" (*Zapiski shтурмана*), which relates the experiences of three aviatrixes—the author herself, G. Grizodubov, and P. Ossipenko. A number of popular biographies of Russian national heroes and great military leaders of past centuries appeared; among them *Ivan Sussanin* by E. Gerasimov, *Bagration* by E. Borisov, and *Suvorov* by S. Kalinin stand out. The appearance of such works in the Soviet Union became possible only after 1934-35, when the Soviet Government had passed from internationalism to nationalism and lifted the ban from the teaching of Russian history. In the great mass of literary documents, "Letters to Chekhov by His Brother Alexander" (*Pisma A. P. Chekhovu ego brata Alexandra*) is one of the most interesting items—it holds much new biographical material on the great writer. Another good biography of Chekhov (*Chekhov*) came from the pen of A. Derman. G. Chulkov wrote an excellent volume on "How Dostoevsky Worked" (*Kak rabotal Dostoevsky*).

Drama. A huge number of new plays was produced both in Moscow and in provincial cities. "The Path to Victory" (*Put k pobede*) by A. Tolstoy, uncrowned king of Soviet authors (and a distant relative of Leo Tolstoy), gave rise to much praise and criticism; it pictures the Civil Wars (1918-21) and has Lenin and Stalin among its acting persons. *Pavel Grekov*, a play on a similar subject by L. Lench and B. Voitekhov, was a hit in Moscow. L. Leonov, one of the most gifted Soviet writers, dramatized in "Wolf" (*Volk*) the conflict between old and new type Russians. Among the plays of the lighter type, the humorous and lyrical "Fairytale" (*Skazka*), by M. Svetlov, was a great success.

Poetry. Among the year's best poetic works was the original, semi-phantastic "Poem of Poets" (*Poema poetov*) by S. Kirsanov. A. Tvardovsky wrote "The Road" (*Doroga*), a volume of short poems which contains pieces of considerable merit.

History. In the rapidly expanding field of historical treatises, monographs, textbooks, etc., there were a number of important items. Only a few can be mentioned here. The Ukrainian Academy of Sciences at Kiev issued the first volume of "A History of the Ukraine" (*Istoria Ukrainy*); it is a detailed and scholarly work. N. Gratziansky issued an interesting volume on "The Middle Ages" (*Srednie Veka*). A concise and informative "Modern History of Colonial and Dependent Nations" (*Novaia istoria zavisimykh i kolonialnykh stran*) was written by E. Steinberg; it covers India, China, Iran, Afghanistan, and Turkey.

Emigré Literature. Besides the Soviet Union, Russian literature lives also in exile. During and after the Bolshevik revolution of 1917-18, quite

a few outstanding Russian writers fled from Russia, settled in Paris, Berlin, etc., and continued to write in their native tongue. In 1939, I. Bunin, the winner of the 1933 Nobel Prize in Literature, issued the second volume of "Arseniev's Life" (*Zhizn Arsenieva*; Brussels); it is a brilliant autobiographical novel and a highly impressive panorama of pre-revolutionary Russia. M. Aldanov wrote "The Beginning of the End" (*Nachalo kontsa*; Paris), a subtle and witty "international novel" in which Soviet diplomats, French politicians and writers, and international adventurers pass in a colorful procession. From D. Merezhkovsky's pen came a two-volume life of Dante (*Dante*; Brussels).

ALEXANDER NAZAROFF.

RUSSIAN ORTHODOX CHURCH IN AMERICA. See RELIGIOUS ORGANIZATIONS.

RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC. The largest of the 11 constituent republics of the U.S.S.R. It comprises the northern and western part of the country from the western border to the Pacific. The subdivisions of the republic are:

(1) Territories: Altai, Khabarovsk, Krasnodar, Krasnoyarsk, Maritime, Orjoniokidze; (2) Regions: Archangel, Chelyabinsk, Chita, Chkalov, Gorki, Irkutsk, Ivanovo, Kalinin, Kirov, Kuibyshev, Kursk, Leningrad, Moscow, Murman, Novosibirsk, Omsk, Oriol, Penza, Perm, Rostov, Ryazan, Saratov, Smolensk, Stalingrad, Sverdlovsk, Tambov, Tula, Vologda, Voronezh, Yaroslavl; (3) Autonomous Regions: Adighey, Circassian, Jewish, Kakas, Karachayev, Oiroi; (4) Autonomous Soviet Socialist Republics: Bashkirian, Buryat-Mongolian, Chechen-Ingush, Chuvash, Crimean, Daghestan, Kabardino-Balkarian, Kalmyk, Karelian, Komi, Mari, Mordovian, North Ossetian, Tatar, Udmurt, Volga German, Yakut.

Total area, 6,375,000 square miles (78 per cent of the Soviet Union); total population (1939), 109,278,614. Chief cities (with 1936 populations): Moscow (capital), 3,641,500; Leningrad, 2,739,800; Gorki, 522,000; Rostov-on-Don, 479,400; Sverdlovsk, 450,000. There were, in 1937-38, 7,830,200 students in elementary schools, 12,037,600 students in secondary and technical schools, and 356,500 students in universities and colleges.

Production, etc. The republic produces about 70 per cent of the industrial output of the Soviet Union. In 1937 the grain crop (wheat, rye, maize, oats, buckwheat, barley, millet, etc.) amounted to 81,700,000 tons. Sugar beets, cotton, flax, and hemp are other agricultural products. Minerals produced include coal (50,000,000 tons in 1937), iron, gold, nickel, potassium, and other minerals. See UNION OF SOVIET SOCIALIST REPUBLICS.

RUTGERS UNIVERSITY. A nonsectarian institution for higher learning in New Brunswick, N. J., founded under the name of Queen's College in 1766. The University consists of the following schools and colleges: Arts and sciences, engineering, agriculture, pharmacy, chemistry, education, ceramics, New Jersey College for Women, and University College. The registration for the autumn of 1939 was 3569, of whom 985 were enrolled in the college for women. The 1939 Summer Session enrollment was 1104. Of the 426 members of the faculty, 283 were professors and 112 instructors. The endowment funds amounted to \$5,176,205 and the income for the year, exclusive of the State agricultural experiment station, was \$3,611,737. The library contained 291,508 catalogued books, 20,000 uncatalogued books, and many thousand unbound items. President, Robert C. Clothier, LL.D.

RUTHENIA. See CZECHO-SLOVAKIA.

RYE. The rye crop of the United States in

1939 of 39,249,000 bu. was 29 per cent below the large 1938 crop of 55,564,000 but 8 per cent above the 1928-37 average production. The current reduction was due largely to much smaller crops in six north-central States accounting for two-thirds of the United States rye production. The 3,811,000 acres of rye harvested for grain represented 53 per cent of the total acreage sown for all purposes versus 4,021,000 acres and 60 per cent in 1938. Acre yields averaged 10.3 bu. in 1939 and 13.8 bu. in 1938. Major rye States were Minnesota with 7,350,000 bu., North Dakota 7,106,000, South Dakota 4,752,000, Nebraska 3,568,000, Wisconsin 2,380,000, Indiana 1,608,000, and Ohio 1,232,000 bu. The season average price per bushel received by farmers was 40 8¢ and the value of production was estimated at \$16,028,000 in 1939 compared to 33.8¢ and \$18,788,000 in 1938. World rye production, as estimated by the International Institute of Agriculture, would total 1,066,000,000 bu. excluding the crop of the U.S.S.R., compared to the 1938 crop of 1,072,000,000 bu. See *Crop Production in 1939* under AGRICULTURE.

HENRY M. STEECE.

SAAR, THE. See EUROPEAN WAR; GERMANY under *Area and Population*.

SABOTAGE. See JUSTICE, DEPARTMENT OF. **SACRAMENTO-GOLDEN EMPIRE CENTENNIAL.** See FAIRS AND EXPOSITIONS.

SAFETY COUNCIL, NATIONAL. A cooperative association, devoted to the conservation of human life through a continuous campaign of accident prevention in industry, on the highway, in the home, and elsewhere. In 1939 there were more than 5000 members, including corporations, firms, individuals, public officials, schools, chambers of commerce, clubs, civic organizations. About 70 per cent of the members were industrial concerns. Affiliated with the national organization were 51 local councils in as many communities throughout the United States.

During recent years the Council's activities laid especial emphasis on the highway accident problem. The Council reports a lower total of traffic accident fatalities for 1938 than for any of the preceding four years. Nine months' reports indicate a still lower total for 1939.

The Eighth Annual National Traffic Safety Contest was conducted, in which 1230 municipalities in 48 States participated.

The Council publishes the *National Safety News* and *The Industrial Supervisor* for industry; *Public Safety*, a magazine that treats all phases of the automobile traffic accident problem, for public officials, police chiefs, etc.; *Safety Education* for schools; *The Safe Worker* and *The Safe Driver* for industrial employees. It also issues *Safe Practices and Health Practices Pamphlets* for industry. The 28th National Safety Congress was held in Atlantic City, N. J., Oct. 16-20, 1939. Managing Director and Secretary, W. H. Cameron. National Safety Council Offices: Civic Opera Building, 20 North Wacker Drive, Chicago, Ill.

SAFETY GLASS. See GLASS.

SAGHALIEN. See SAKHALIN; KARAFUTO. **ST. CHRISTOPHER-NEVIS.** See LEEWARD ISLANDS, BRITISH.

ST. HELENA. A British colony in the South Atlantic, consisting of the islands of St. Helena (47 sq. mi.) and its dependency—Ascension (34 sq. mi.). Estimated population (Jan. 1, 1939), 4633 including 159 on Ascension. Capital, James-

town (1381 inhabitants in 1931). By Letters Patent of Jan. 12, 1938, the islands of Tristan da Cunha, Nightingale, Inaccessible, and Gough were made dependencies of St. Helena. The principal products are New Zealand hemp, lily bulbs, and tow. In 1938, imports were valued at £37,613 and exports (including re-exports) at £8714; revenue amounted to £26,912 and expenditure to £29,930. The colony is administered by a governor (who makes all ordinances) assisted by an executive council. Governor, Henry G. Pilling (appointed June, 1937).

ST. JOHN'S COLLEGE. A college of liberal arts and sciences for men in Annapolis, Md., founded as King William's School in 1696. The enrollment for the first half year of 1939-40 was 124. There were 29 faculty members. The income for the year 1939 was \$206,198. The library contained 33,627 volumes. President, Stringfellow Barr.

ST. KITTS. Same as St. Christopher. See LEEWARD ISLANDS, BRITISH.

ST. LAWRENCE UNIVERSITY. An institution for the higher education of men and women at Canton, N. Y., founded in 1856. The registration for the autumn term of 1939 was 746. For the summer session of 1939, 278. The faculty numbered 68 members. The endowment funds amounted to \$5,334,454 and the income for the year was \$457,864. The law school of the University is located in Brooklyn, N. Y. Its enrollment for the autumn term of 1939 was 1008. The library contained approximately 68,000 volumes. President, Laurens Hickok Seelye, M.A., LL.D.

ST. LUCIA. A British island colony in the Windward Islands group of the West Indies. Area, 233 square miles; population (1939 estimate), 69,084. Chief towns: Castries, the capital, 12,000 inhabitants in 1938 (the port of Castries has one of the best harbors in the West Indies); Soufrière, 7309 inhabitants. The principal products are sugar, copra, limes, cacao, and bananas. The 1939 sugar crop was estimated at 8350 tons. In 1938 imports totaled £189,303; exports, £135,313; public revenue, £88,511; expenditure, £105,205; public debt, £102,276. Revenue in 1939 was estimated at £82,371; expenditure, £95,498. An administrator (under the governor of the Windward Islands) governs the colony, assisted by an executive council. The legislative council consists of the governor of the Windward Islands, 3 ex officio members, 3 nominated members, and 5 elected members. Administrator, Arthur Alban Wright (appointed June 10, 1938).

ST. PIERRE AND MIQUELON, mīk'ē-lōn'. The main islands in two small groups, near the south shore of Newfoundland, owned by France. Area of St. Pierre group, 10 square miles; Miquelon group, 83 square miles. Total population (1939 estimate), 4000. Capital, St. Pierre. Cod fishing is the principal industry. In 1937 imports were valued at 19,771,000 francs; exports, 14,585,000. The budget for 1938 was balanced at 10,371,900 francs (franc averaged \$0.0405 in 1937 and \$0.0288 in 1938). The islands are under an administrator who is assisted by a council of administration made up of government officials and seven members elected by popular vote.

ST. THOMAS. See SÃO THOMÉ AND PRINCEPE; VIRGIN ISLANDS.

ST. VINCENT. A British island colony in the Windward Islands of the West Indies. Area, 150.3 square miles; population (1938 estimate), 57,586, compared with 47,961 (1931 census).

Kingstown (capital) had 4269 inhabitants (1931). On Dec. 31, 1937, there were 10,457 pupils enrolled in the 37 primary schools and 151 pupils in the 2 secondary schools.

Arrowroot, sirup, sugar, coconuts, sweet potatoes, cotton, cassava, and plantains are the chief products. The 1939 production of arrowroot starch totaled 38,611 bbl., as against 38,962 in 1938. In 1938, imports aggregated £198,786; exports, £210,642; public revenue, £102,016; expenditure, £96,762; public debt, £95,390. St. Vincent is under the governor of the Windward Islands but has its own executive and legislative councils. The islands of the Lesser Grenadines are administered from St. Vincent. Administrator, Maj. William Bain Gray (appointed July 2, 1938).

SAITO, HIROSHI. A Japanese diplomat, died in Washington, D. C., Feb. 26, 1939. Born in Gifu, Japan, Dec. 24, 1886, he was educated at the Peers College (1904-07) and at the Tokyo Imperial University (1907-10). Entering the diplomatic service, he was appointed attaché at Washington in 1911 and shortly after, 3d secretary. In 1917 he was transferred to the London Embassy until 1921, when he was named consul at Seattle, Wash. Consul general in New York City during 1923-28, he then returned to Japan to head the bureau of information of the Foreign Office. He returned to London as counselor in 1931, and in 1932 went to Washington as chargé d'affaires. In 1933, Saito was appointed Japanese minister to The Hague to negotiate an arbitration treaty with The Netherlands.

In the following year he was appointed Ambassador to the United States, which office he held until the fall of 1938 when he retired because of ill health. Mr. Saito served his country in America during the difficult days of rapidly growing anti-Japanese feeling, which reached a peak by the sinking of the *Panay* in December, 1937, by Japan. His conduct was unprecedented when he expressed his Government's regret over the *Panay* on a commercial radio-broadcast. Held in high esteem by the American Government, his ashes were sent to Japan on a cruiser.

Mr. Saito represented his country at the Paris Peace Conference (1919), the 1st Assembly of the League of Nations (1920), at the Washington Naval Conference (1921-22), the London Naval Conference (1930), the Disarmament Conference, Geneva (1931-33), the Assembly of the League of Nations, Geneva (1931-33), and the Economic Conference at London (1933). He was the author of a *Life of Ramsey MacDonald* (1931) and *Japan's Policies and Purposes* (1935).

SAKHALIN, sā'kà-lēn'. An island off the east coast of Siberia. Area, about 29,800 square miles; population, about 400,000. The area north of 50° N. is a district of the Far Eastern Territory of Soviet Russia and consists of 15,826 square miles with a population (1933) of 69,000. Fish, oil, and lumber are the principal products of the Soviet section. Aleksandrovsk-on-Sakhalin (8100 inhabitants) is the capital. For the Japanese part of the island, see KARAFUTO.

SALVADOR, EL, èl sāl'vā-dōr'. A republic of Central America. Capital, San Salvador.

Area and Population. The smallest and most densely populated of the Central American states, El Salvador has an area of 13,176 square miles and a population estimated at 1,704,000 on Jan. 1, 1939 (1,549,000 at the 1933 census). Indians and mestizos constitute the vast bulk of the population, but the small ruling class is largely of Spanish descent.

Living births in 1938 numbered 70,608 (41.9 per 1000); deaths, 29,461 (17.5 per 1000); marriages, 6050 (3.6 per 1000). Population of the chief cities: San Salvador, 102,316 (1937); Santa Ana, 83,302; San Miguel, 44,793; Santa Tecla, 33,331; Ahuachapán, 31,245; San Vicente, 28,760; Zatecoluca, 26,676; Sonsonate, 21,138.

Education and Religion. Illiteracy remains widespread, although elementary education is nominally free and compulsory. For school enrollment, see 1938 YEAR BOOK, page 665. Roman Catholicism is the dominant religion.

Production. Coffee accounts for more than 90 per cent of the value of all exports. Production in the 1938-39 season totaled 60,000 metric tons (51,200 in 1937-38). The rice harvest in 1937 was 11,400 metric tons; cane sugar, 30,100 metric tons; beer production, 396,256 gal. Forests yield indigo and cabinet woods. Cattle and hog raising are important industries.

Foreign Trade. In 1938 imports were valued at \$9,147,000 (in U.S. currency) and exports at \$10,935,000 (1937 imports were \$9,982,000; exports, \$15,516,000). The principal export was coffee. The exports (valued in American dollars) were distributed chiefly as follows: United States, \$6,755,000; Germany, \$1,074,000. Of the imports, the United States supplied \$4,275,000; Germany, \$1,926,000; United Kingdom, \$833,000; Italy, \$480,000. See IMPORTS AND EXPORTS.

Finance. Actual returns of budgetary operations for the fiscal year ended June 30, 1939, placed ordinary revenues at 16,727,000 colones and ordinary expenditures at 17,283,000 colones. For 1939-40, total budget estimates placed revenues at 24,267,000 colones and expenditures at 24,258,000 colones. Beginning Jan. 1, 1940, budgets were to be computed on a calendar-year basis. The public debt on Aug. 31, 1939, was 40,026,000 colones, of which 35,382,000 was external and 4,644,000 internal. The unit of currency is the colon, the exchange value of which remained practically stable at 2.50 to the U.S. dollar during 1939 and several preceding years.

Transportation. At the beginning of 1939 there were 375 miles of railway line; and 3648 miles of highway (see ROADS AND STREETS). By the end of 1939, the Pan-American highway was completed from the Guatemalan border through Santa Ana and San Salvador to the town of Cojutepeque, a distance of 87 miles and grading of the same road was carried out from Cojutepeque to a point within two miles of San Miguel. Air lines connected the capital with Tegucigalpa, Guatemala City and all points on the inter-American air network. In 1937, 740 vessels entered the three chief ports—La Unión, La Libertad, and Acajutla.

History. Despite widespread opposition to extension of the term of office of President Maximiliano H. Martínez (see 1938 YEAR BOOK, p. 666), he was re-elected on Jan. 21, 1939, by the Constituent Assembly for the term ending Jan. 1, 1945, and was inaugurated March 1. General Martínez had seized power by a *coup d'état* Dec. 2, 1931, and was re-elected by a hand-picked Congress in 1932 and 1935.

Provision for extension of the Presidential term from four to six years and for continuance of General Martínez in office was made in the new Constitution drafted by the Constituent Assembly, which met on Nov. 20, 1938 and approved the text of the new fundamental law on Jan. 20, 1939. The new Constitution provided that the President was to be elected for only one term by popular suffrage,

but stipulated that the incumbent for the first presidential term was to be chosen by the Constituent Assembly and the no-re-election provision waived on this occasion.

The adoption of constitutional measures giving the President greatly increased dictatorial powers and the extension of his term of office provoked an abortive revolt late in January, but it was easily suppressed with the arrest of the ringleaders. (For a detailed summary of the Constitution, see *Bulletin of the Pan American Union*, June, 1939, p. 353 f.) Among measures enacted under the new Constitution were a press law restricting the editing and publishing of all publications, except scientific ones, to native-born Salvadoreans; forbidding circulation of various other publications; denying admittance to persons expelled from other countries; and providing for Presidential appointment of all mayors, who were formerly elected by popular vote of municipalities.

In a speech of March 1 to the National Assembly, President Martínez summarized the accomplishments of his regime as follows: Punctual payment of civil servants; rehabilitation of the national finances without recourse to foreign loans; suppression of parties "with destructive tendencies"; reduction of interest rates; stimulation of public works; more efficient and honest management of public funds; extension of education; and reduction of the public debt. However the country was adversely affected by the outbreak of the European War in September. Prices rose and import duties produced markedly less revenue. The government established an Economic Consultative Board to watch prices and prevent profiteering. Exports of specified commodities were restricted to surpluses to curb price rises. The government was also authorized to import cotton, construction materials and other supplies needed to support domestic industry.

The war produced a noticeable switch of Salvador's trade from German and other European markets to the United States and a decline in German influence. A number of government contracts were transferred from German to United States firms. Col. Eberhardt Bohnstedt, German director of Salvador's Military College, resigned on September 6 and was succeeded by a Chilean. Salvador's resignation from the League of Nations became effective July 21, 1939.

See GUATEMALA and NICARAGUA under *History*.
SALVATION ARMY, THE. A world-wide organization with international headquarters at 101 Queen Victoria St., London, England, whose purpose is the salvation of mankind from all forms of distress—spiritual, moral, temporal. The movement was first organized as The Christian Mission in the East End of London in 1865 by William Booth, and, in 1880, was extended to the United States. The government is military in character with General George L. Carpenter as international head. The doctrine of The Salvation Army is a simple evangelical creed based on the Methodism from whence it came. It does not concern itself with fine theological differences, but bases its activities on the belief that "They serve God best who serve their fellow-men."

The Salvation Army is now active in 97 countries and colonies, carrying on its work in 104 languages. There were in its service in 1938, 27,417 officers and cadets; 11,003 persons without rank wholly employed; 160,203 honorary local officers and bandmen; 84,961 songsters; 34,-

219 corps cadets; and 17,816 corps and outposts in operation. Social welfare institutions and agencies numbered 1684, free day schools 1132, and Naval and Military Homes 35. It published 126 periodicals, with a total average circulation of 1,441,783 copies per issue.

There were in the United States in 1938, 1631 corps and outposts, 4 Training Colleges, 4787 officers and cadets, and 37,500 honorary local officers and bandsmen. Converts during the year numbered 74,235. Social Welfare institutions included 120 men's hotels and 17 residential hotels for young women, accommodating a total of 11-120. Men's Social Service Centers numbered 107 with accommodation for 4735; 9 children's homes and hospitals with accommodations for 848; 36 women's homes and hospitals with accommodations for 2147; and 2 dispensaries which treated 19,564. At Thanksgiving and Christmas free dinners were given to 446,467 persons and toys to 374,270 children. During 1938, 4595 prisoners on discharge were assisted by The Salvation Army; 97,908 mothers and children were given summer outings; 76,930 men and women were given employment through the Army's free employment bureaus; and 903 missing persons found.

The National Headquarters of The Salvation Army in the United States are at 120 West 14th Street, New York City. National Secretary, Commissioner Edward J. Parker.

SAMOA. A group of 14 islands in the Southern Pacific, about 4000 miles southwest of San Francisco. The islands of the group east of 171° W. longitude belong to the United States; those west of that line are administered by New Zealand under a mandate of the League of Nations.

American Samoa. American Samoa comprises the islands of Tutuila, Tau, Olosega, Ofu, Annuu, and Rose Island. Swains Island is included in the administrative district of American Samoa. The total area is 76 square miles and the estimated population on July 1, 1939, was 12,785, mostly Polynesians and half-castes. The Naval Station at Pago Pago is the seat of government. The population of the town was approximately 1000. The harbor is one of the best in the South Seas. The average school enrollment in 1938-39 was 3260. Instruction is in English. Copra produced and exported in the fiscal year 1938-39 was 1401 tons valued at \$55,324. The value of imports during the same year was \$194,138; exports, \$102,818. Governmental revenues in 1938-39 were \$106,231; expenditures, \$127,317. The islands are under the jurisdiction of the U.S. Navy Department and are administered by the commandant of the naval station at Pago Pago. There is a native advisory council called the Fono, which meets annually. Governor in 1939, Capt. Edward W. Hanson, U.S. Navy (assumed office, June 4, 1938).

Western Samoa. The islands under New Zealand's control are officially known as the Territory of Western Samoa. Area, 1133 square miles. Apia, on Upolu, is the chief harbor and seat of government. The population at the census of Apr. 1, 1938, was 57,759 (Samoan natives, 54,160; Europeans, 397; half-castes, 2770; others, 432). The natives are Christians. The 1938 school enrollment was over 1700. The chief products, with 1938 export figures, are: Copra, 11,241 tons, (£103,529); cacao, 1647 tons (£59,699); bananas, 205,815 cases (£77,143). Imports in 1938 totaled £196,272; exports, £248,605. Governmental revenues and expenditures for the fiscal year ended

Mar. 31, 1938, £139,450 and £139,070, respectively. There were 183 miles of roads in 1939. Ninety-five vessels of 115,048 tons entered the chief port, Apia, in 1937. Regular shipping services connect the port with Fiji and New Zealand. Acting Administrator in 1939, A. C. Turnbull. Viscount Galway, the Governor-General of New Zealand, and Lady Galway visited Western Samoa in August, 1939, and were warmly welcomed by a mass meeting of 5000 natives.

SAN FRANCISCO. See CALIFORNIA; MUNICIPAL OWNERSHIP.

SANITATION. See GARBAGE AND REFUSE DISPOSAL; SEWERAGE AND SEWAGE PURIFICATION; WATERWORKS AND WATER TREATMENT.

SAN MARINO, *sän mā-rē'nò.* An independent republic near the town of Rimini, encircled by Italian territory. Area, 38 square miles; population (September, 1938), 14,389. Capital, San Marino (2000 inhabitants). Cattle, wine, and building stone are the chief exports. The financial estimates for 1938-39 balanced at 5,474,673 lire (lire averaged \$0.0526 in 1938). Legislative power is vested in a grand council of 60 members from whom two are appointed every six months to act as regents.

SANTA CRUZ DE TENERIFE. See CANARY ISLANDS.

SANTO DOMINGO. See DOMINICAN REPUBLIC.

SÃO THOMÉ (*soun'tò-mã')* AND **PRINCIPE**, *prên'sê-pê.* Two islands in the Gulf of Guinea, West Africa, belonging to Portugal. Area, 384 square miles; population (1936), 59,000. São Thomé (capital) had 3187 inhabitants. The chief products are coffee, cacao, coconuts, palm oil, and cinchona. In 1937 imports totaled 20,500,000 escudos; exports, 46,400,000. The budget (1938) was balanced at 12,073,226 escudos. (Escudo averaged \$0.0443 in 1938 and \$0.0448 in 1937). In 1937 there were 169 miles of roads. The colony is administered by a governor.

SARAWAK, *sä-rä'wäk.* An independent state in northwest Borneo, under British protection. Area, 50,000 square miles; population (1938 estimate), 600,000. Kuching, the capital, had 25,000 inhabitants in 1931. The chief products are rubber (28,000 metric tons in Sarawak and North Borneo, 1938); sago; pepper; rice (163,000 metric tons, 1938); petroleum; gold (18,520 fine oz., 1938); jelutong and cutch. In 1938 public revenue (in Sarawak or Straits Settlements dollars) totaled \$4,261,899; expenditure, \$4,272,140; imports, \$22,371,939; exports, \$26,135,097. (Straits \$ averaged \$0.5692 in 1938). Rajah, Sir Charles Vyner Brooke (succeeded, 1917).

A contribution of £110,000 to Great Britain's war chest was made by the Rajah of Sarawak in October, 1939.

SARGENT, JOHN GARIBALDI. American lawyer, died in Ludlow, Vt., Mar. 5, 1939, where he was born, Oct. 13, 1860. Graduated from Tufts College in 1887, he read law with William W. Stickney and was admitted to the bar in 1890, subsequently becoming a member of the firm of Stickney, Sargent & Skeels. Entering politics, Sargent was elected State's attorney for Windsor County, Vt., in 1898, and was thereafter secretary of civil and military affairs (1900-02), and attorney general (1908-12). He returned to the practice of law, and in 1925 President Calvin Coolidge appointed him attorney general of the United States, where he served until 1929. Thereafter he was a member of Stickney, Sargent &

Chase, and president of the Ludlow Saving Bank and Trust Co. In April, 1935, Mr. Sargent was appointed a referee in the reorganization of the railroads, and in that year also took the presidency of the Calvin Coolidge Memorial Corporation.

An expert in corporation law, Mr. Sargent had appeared before the U.S. Supreme Court as representative of Vermont in a boundary dispute with New Hampshire, and had served at one time as chairman of the Vermont Commission on Uniform Laws. He was an opponent of woman suffrage, and while attorney general fought for the enforcement of the 18th Amendment.

SASKATCHEWAN, sās-kāch'ē-wōn. A prairie province in western Canada. Area, 251,700 square miles; population (1939 estimate), 949,000 compared with 930,893 (1936 census). During 1938 there were 18,162 births (19.3 per 1000); 6060 deaths (6.4 per 1000); 5857 marriages (6.2 per 1000). Chief cities (with 1936 census figures in parentheses): Regina, the capital (53,354); Saskatoon (41,734); Moose Jaw (19,805); Prince Albert (11,049); Swift Current (5074). In 1937 there were 237,260 students enrolled in schools of all kinds, including 5162 in the colleges and universities.

Production. The gross value of agricultural production for 1938 was \$136,471,000 of which field crops accounted for \$118,303,000; farm animals, \$12,662,000; dairy products, \$15,669,000; poultry products, \$5,872,000. Livestock (1939): 800,100 horses; 1,170,200 cattle including milch cows; 341,000 sheep; 470,000 swine. Fur production for the year ended June 30, 1937, totaled 1,839,203 pelts valued at \$1,327,116. The 1937 output of the forests equaled 79,627 M cu. ft. valued at \$2,099,475. In 1938 the fisheries catch was valued at \$473,600.

Mineral production (1938) was valued at \$7,782,847, of which gold (50,021 fine oz.) accounted for \$1,759,489; copper (18,156,157 lb.), \$1,810,532; zinc (29,962,597 lb.), \$920,751; coal (1,022,166 tons), \$1,380,416; sodium sulphate (62,920 tons), \$552,180; silver (898,413 fine oz.), \$390,603. In 1937, from the 689 manufacturing plants, with a total of 6107 employees, the net value of products was \$17,068,655 (\$15,185,500 in 1936).

Government. For the year ended Apr. 30, 1939, revenue was \$20,958,913; expenditure, \$21,342,013; the bonded debt (exclusive of treasury bills—\$82,637,576) totaled \$123,800,273. Estimates (1939-40): revenue, \$23,325,439; expenditure, \$23,656,200.

The government is vested in a lieutenant-governor, advised by a ministry of nine members who also are members of the legislative assembly of 52 members elected for a term of five years by popular vote of the people. The number of members in the legislative assembly was reduced from 55 to 52 by a redistribution bill of March, 1938. At the provincial general election of June 8, 1938, the standing of the parties in the legislative assembly was: Liberal, 36; Co-operative Commonwealth Federation, 10; Social Credit, 2; Independent, 2. In the Canadian parliament, the province is represented by 6 members in the Senate (appointed for life) and 21 members in the House of Commons. Lieutenant-Governor, A. P. McNab (appointed Oct. 1, 1936); Premier, W. J. Patterson (Liberal).

SAUDI ARABIA. See ARABIA.

SAXONY. See GERMANY.

SCANDINAVIAN LITERATURE. Danish. **Fiction.** Johannes Buchholtz in *Vanda Venzel* relates how a Copenhagen girl succeeds in attaining happiness and spreading joy around her although she began life with a handicap. The action of *Barbara*, Jørgen-Frantz Jacobsen's posthumous novel, takes place on the Faroe Islands about the middle of the eighteenth century. The work is outstanding for its intensely dramatic action, its vivid descriptions of primitive nature, and its interesting portrayal of old Faroe customs. Hans Kirk's *De ny Tider* (The New Age) shows how social and economic changes influence life in a post-war community. The story is well told. Even the happenings of everyday existence are invested with a certain charm. The third volume of Knuth Becker's *Uroligt Foraar* (Restless Springtime) maintains the same epic tone and realistic character delineation as the earlier volumes mentioned in last year's article. Aase Hansen shows especially good understanding of feminine psychology in *Drømmen om i Gaar* (The Dream about Yesterday) when she has the main character tell the sad story of her life to a former classmate. Gunnar Gunnarsson departed this year from his usual epic style. His *Trylle* (Charming) is a volume of three short tales which picture the interaction of human and animal life in a direct and pleasing way.

Miscellany. Recently the scientist Aage Krarup Nielsen visited several South Sea Islands. In *Aloha* he gives interesting and life-like accounts of the peculiar people and quaint traditions of these islands. Often these accounts are supplemented with enlightening historical sketches. *Fra Frisaterne* (From The Free States), by Johannes V. Jensen, is an accurate and interesting description of present-day life in the United States. It is based largely on Jensen's latest visit to this country. Martin Andersen-Nexø continued his autobiography in *Vejs Ende* (The End of the Road), which relates his experiences as a university student and later as a teacher and writer.

Norwegian. Fiction. In *Fortid* (The Past) Peter Egge shows how a person's past can become a force strong enough to threaten his happiness. Lars Berg's new book, *Og landet tog till å leve* (And the Country Began to Live), portrays the struggle between the communistic and the democratic-capitalistic ideologies. The hero is a man who although born in poverty attains a position of leadership and succeeds in being elected as a representative of the communistic party in the *Storting*. Most of the action of *Gøsta Hammerlund's Møte med fru Brontze* (Meeting Fru Brontze) takes place on a Norwegian steamer which carries passengers from Dieppe to the Canary Islands. The author seems to transport the reader into a miniature world. He absorbs and reproduces the atmosphere of the southern countries and identifies himself with his characters. Sigrid Undset went to the latter part of the eighteenth century for the material for *Madame Dorethca*, a creative work of rare epic power and, at the same time, a faithful picture of Norwegian culture at that period.

Miscellany. Already the armed conflict of Europe has become the subject of serious treatment. In *Nordens insats* (The Contribution of Scandinavia), Eivind Berggrav asks, What should be the attitude of the Scandinavian countries? His answer is that they should observe a strict neutrality, refrain from passing judgments, mitigate the evil effects of the war, and

prepare for active co-operation in the eventual rebuilding of a post-war Europe. In *Mennesket søker fotfeste* (Man Seeks a Foothold), Ragnar Vold attributes the present crisis to wrong attitudes. He maintains that success is not the chief criterion of cultural values and that the misery or happiness of a country does not depend on its use of this or that "system." The extreme northern part of Norway, Finnmark, with its romantic nature and its interesting people has often appealed to Scandinavian writers. This year Lillian Bye wrote *Finner i Finnmark* (Finns in Finnmark) and Mona Beichmann, *Forunderlige Finnmark* (Wonderful Finnmark).

Swedish. Poetry. In *Gamla gudar* (Ancient Gods) Bo Bergman expresses an ardent love for liberty and a strong hatred for its enemies. Einar Malm's *Pejlingar* (Soundings), a lyric journal, expresses emotions of different kinds, often that of restlessness and inward struggle. The soul's inward discord is a recurrent theme also in Johannes Edfelt's *Vintern är lång* (The Winter is Long). This collection of poems is characterized by a highly individual diction, a strong musical quality, and a picturesque use of metaphors.

Fiction. In *Stopl! Tänk på något annat* (Stop! Think of Something Else) Olle Hedberg gives expression to a gloomy yet not hopeless philosophy of life. Although he fails to find any order or logic in the universe, he contends that man need not be bound by this lack of logic but can invest life with a meaning. The pessimistic note is more pronounced in Irja Browallius' *Två slår den tredje* (Two Strike the Third One), a cheerless, yet powerful description of peasant life. In *Giv oss jorden* (Give Us the Earth), Vilhelm Moberg completed the story of Knut Topping which he began a few years ago in *Sänkt sedebetyg* (see NEW INTERNATIONAL YEAR BOOK, 1935). In the new volume he treats the problem of finding peace and happiness on earth. Martin Koch, the literary champion of the working man, broke his silence of nearly 20 years with *Mauritz*, a series of sketches portraying scenes from the author's own childhood and youth. Ivar Thor's *I ditt anletes svett* (In the Sweat of Thy Brow), gives a clear and delightful insight into modern farm life as it has developed under new economic and industrial conditions. Sigfrid Siwertz' *Jag fattig syndig* (I Poor Sinner) is a collection of short stories told in the first person.

Criticism. In his work on *Bertil Malmberg*, Alf Ahlberg differs somewhat from earlier critics in his interpretation of the poet. Among other things, he stresses the essential continuity of Malmberg's authorship. In *Carl Linnaeus*, Knut Hagberg shows a clear understanding of the great botanist not only as a scientist, but also as a man and a poet.

HARRY V. E. PALMBLAD.

SCHAUMBURG-LIPPE. See GERMANY.

SCHOOLS. See EDUCATION; sections on Education under the States and countries and articles on various institutions. Also, see ARCHITECTURE.

SCHOOLS, ELEMENTARY AND SECONDARY. The U. S. Office of Education estimated that about 21,750,000 pupils were enrolled in the elementary schools of the United States in September, 1939, and about 7,200,000 in high schools. About 2,060,000 entered the first grade for the first time, of whom 650,000 had attended kindergartens and 50,000 had attended nursery schools. The annual cost for education throughout the

country was estimated at \$1,300,000,000 for elementary schools and kindergartens and \$800,000,000 for high schools. The average school term is 181 days in cities and 163 days in rural communities. Teachers' salaries average \$1,818 in urban areas, as compared with \$827 in rural areas. There are still 124,000 one-teacher schools throughout the country, enrolling 2,725,000 pupils, but these schools are being eliminated at the rate of 2,000 a year.

Although the number of high schools has increased from 16,300 in 1918 to 25,600 in 1936, only 7 of every 10 persons of high-school age are enrolled in school. Of the more than seven million enrolled, about 400,000 are attending private secondary schools and about 40,000 are enrolled in high-school postgraduate classes. More than 200 different subjects are offered in the high schools of today. The typical student takes during his high-school career one or more courses in English, social science (including history), science, commercial work, physical education, home economics (for girls), agricultural or industrial work (for boys), and probably mathematics. Of the 1,110,000 high school graduates of 1939, about 400,000 entered college.

The latest final statistics for the United States school system were issued for the year 1936. In that year the public schools enrolled 26,367,098 pupils or 83.6 per cent of all persons of school age (5 to 17 years). Average daily attendance was 22,298,767; average session, 173 days. There were 870,963 teachers (179,073 men and 691,890 women), who worked for an average annual salary of \$1,283. The cost of public school education for that school year was \$1,968,898,000, about \$75 per pupil. Private elementary and secondary schools expended an additional \$168,590,000 and reported enrollments as follows: elementary and kindergarten, 2,263,357; high school, 387,309. In addition, there were 42,035 students in college preparatory schools and 21,087 secondary students in normal schools. Kindergarten enrollment (public and private) totaled 644,559. Later information is to be found in the articles on the various States in the section entitled *Education*. See also the article on EDUCATION, and the section on *Education* in articles on foreign countries.

The Office of Education estimated that there were about 300 hospital schools in the United States in 1939, offering educational facilities to children who are hospitalized for long periods of time.

SCHWAB, CHARLES M (ICHAEL). An American industrialist, died in New York, Sept. 18, 1939. Born in Williamsburg, Pa., Feb. 18, 1862, he was educated in Loretto, Pa., and at St. Francis' College there. In 1880 he entered the employ of the Carnegie Co., as a stakedriver in the engineering corps of the Edgar Thompson Steel Works, becoming assistant manager in 1887. With the acquisition of the Homestead Steel Works in 1887, he was sent there as superintendent, but two years later was recalled to be general superintendent at Edgar Thompson. During the strike disturbances at Homestead in 1892, Schwab took over the superintendency of that Works too. In 1897 he was elected president of the Carnegie Steel Co., Ltd., and in 1901 he accepted the presidency of the newly formed U. S. Steel Corporation, a merger of the Morgan and Carnegie steel interests.

In 1902, Schwab bought control of a moribund concern, the Bethlehem Steel Co., and in 1903 he

retired from U.S. Steel to devote all his efforts to his newly acquired company. Under his direction it became one of the foremost manufacturers of armor plate for the U.S. Navy, and by 1913 was one of the largest builders of steel ships. In 1914 he secured British, Russian, and French contracts for the building of ships, and when the United States entered the War, Bethlehem Steel prospered. From April to December, 1918, Schwab was director general of shipbuilding of the U.S. Shipping Board Emergency Fleet Corporation. After the armistice he returned to Bethlehem and the Company again entered upon a period of expansion and huge profits were made. In recent years Mr. Schwab had served as chairman of the board of directors of Bethlehem Steel, and several times his ouster was asked at meetings of the stockholders, but after a vote he was retained in that position. The bonus system of the corporation was frequently under fire, but was always defended by Schwab who referred to it as an "incentive" system and one that he had inherited from Carnegie. Bethlehem Steel, which he served for more than 35 years, might well be called his monument.

In 1905 Mr. Schwab built his famous chateau in New York City, in which he housed his many art treasures, a pipe organ and a private chapel. After the death of Mrs. Schwab on Jan. 12, 1939, the residence was put up for sale. Mr. Schwab made many benefactions to the Catholic Church. He succeeded Judge Gary as president of the American Iron and Steel Institute in 1926, and upon his retirement in 1932 received the British Melchett medal "for distinguished service in industry." He was a member of the French Legion of Honor.

SCIENCES, NATIONAL ACADEMY OF. The National Academy of Sciences was incorporated by Act of Congress in 1863 for the purpose of investigating, examining, experimenting, and reporting upon any subject of science or art whenever called upon by any department of the United States Government. Membership is by election, in recognition of outstanding achievements in scientific research, and is limited to 350 active members and 50 foreign associates. Members must be citizens of the United States.

At the Annual Meeting held in Washington, D. C., April 24, 25, 26, 1939, fifteen new members were elected, as follows: Gregory Breit, Detlev Wulf Bronk, William Bosworth Castle, Frederick Gardner Cottrell, Frederick Parker Gay, Albert Baird Hastings, Vladimir Nikolae-vich Ipatieff, Merkel Henry Jacobs, Zay Jeffries, Donald Forsha Jones, George Bogdan Kistiakowsky, Warren Judson Mead, Oscar Riddle, Adolph Hans Schultz, Philip Edward Smith. Three additional foreign associates were elected: Sir Joseph Barcroft, of Cambridge, England; Sir William Bragg, of London; and F. A. Vening Meinesz, of Utrecht, The Netherlands.

Four gold medals were presented at the dinner on Apr. 25, 1939: The Agassiz Medal for Oceanography, to Harald Ulrik Sverdrup, of the Scripps Institution of Oceanography, of the University of California, for his personal oceanographic explorations in Arctic regions and his numerous contributions to physical oceanography and the interrelations between the sea and the atmosphere; the Daniel Giraud Elliot Medal for 1933 and an accompanying honorarium of \$200 to Richard Swann Lull, of the Peabody Museum of Natural History, Yale University, in

recognition of his work entitled: "A Revision of the Ceratopsia or Horned Dinosaurs"; the Daniel Giraud Elliot Medal for 1934 and an accompanying honorarium of \$200 to Theophilus Shickel Painter, of the University of Texas, in recognition of his work on the chromosomes of the salivary glands in *Drosophila* in relation to the problems of mutation and genetics, published in "Genetics" and in the "Journal of Heredity" in 1934; and the John J. Carty Medal and an accompanying honorarium of \$3000 to Sir William Bragg, of The Royal Institution, London, England, in recognition of his fundamental work in X-ray crystal analysis.

The Autumn Meeting was held at Brown University, Providence, Rhode Island, Oct. 23, 24, and 25, 1939. The Academy publishes an Annual Report, Biographical Memoirs of its deceased members, occasional scientific Memoirs, and monthly Proceedings.

The officers of the Academy are: Frank B. Jewett, president; Arthur L. Day, vice-president; L. J. Henderson, foreign secretary; F. E. Wright, home secretary; Arthur Keith, treasurer; Paul Brockett, executive secretary. The Academy building is at 2101 Constitution Avenue, Washington, D. C.

SCOTLAND. See GREAT BRITAIN.

SCULPTURE. Sculpture was given especial prominence both at the New York World's Fair and at the Golden Gate Exposition. In the former the dominant work was a colossal statue of George Washington, approximately 50 feet high and resting on a 12-foot pedestal, by James Earle Fraser. More than sixty works in sculpture adorned the various buildings, thoroughfares, and plazas. As far as possible, these lent emphasis to certain exposition themes. For example, in the transportation zone was "The Spirit of the Wheel" by Rene P. Chambellan and "Riders of the Elements" by Chester Beach, symbols of man's progress in transportation; while in the Court of Communications was placed a work entitled "Speed," by Joseph Renier, a woman astride a winged horse, suggesting the rapidity with which man's thought may be carried around the world today by modern methods. Thirty-five sculptures were produced as commissions given by the New York Fair Corporation. All of these, with the exception of three, were in plaster. "Textiles," by Robert Foster, was made of sheets of steel electrically welded; "The Tree of Life," by Lawrence Tenney Stevens, was carved from the trunk of a huge elm; "The Fountain of the Atom," by Waylande Gregory, consisted of ceramic groups and four large adult figures surrounding a 30-foot shaft of glass brick. The works in plaster were cast by skilled union workmen under the direction of the Fair management. While modern in character, greatly simplified and unrealistic, this sculpture was well adapted to the purpose for which it was created.

On Treasure Island in San Francisco Bay, the dominant work, conveying the theme of the Exposition, was the gigantic statue of "Pacifica," by Ralph Stackpole, which stood 80 feet high. It was both western and eastern in character and stressed the idea that art is ageless. Nearby, encircling a fountain, were smaller statues symbolizing Pacific races, by various sculptors, almost all of whom belonged to the West Coast group.

Sculpture produced under the aegis of the Division of Fine Arts, Public Buildings Administra-

tion, Federal Works Agency, constituted one of the most interesting sections of the exhibition held under these auspices at the Corcoran Gallery of Art in November. Many of the models shown were of works produced for the Federal Building and its surroundings at the New York World's Fair. Others were for Post Offices and other Federal buildings throughout the country. Included in this display was the statue of "The Young Lincoln—Rail Joiner," by Louis Slobodkin which, enlarged to fifteen feet in height and cast in plaster, after being set up in the Garden Court at the New York World's Fair, had been removed by a Fair official because of adverse criticism. This statue had been approved by a professional jury appointed by the Division of Fine Arts, and was later cast in bronze, life-size, at Government expense, and given prominent placement in the building occupied by the Department of the Interior in Washington. As a whole, the Government commissions for sculpture seemed to have brought forth works of exceptional spirit and originality.

The Sculptors' Guild, an off-shoot from the National Sculpture Society and essentially "left-wing," held an open-air exhibition again in 1939, on a vacant lot at Park Avenue and 39th Street in the heart of the business district of New York City.

The Society of Medallists issued to its members two medals: one by Edward McCartan, contrasting differences between life in the Old World and the New; the other by John Gregory, illustrating the last lines of Ceres' Song from "The Tempest."

Two notable competitions for sculpture were held in 1939, one for a statue of Thomas Jefferson to be permanently placed in the Jefferson Memorial under construction in Washington, D. C., and the other for an equestrian statue of Stonewall Jackson to be erected on the battlefield of Manassas, commonly known as "Bull Run." One hundred and one sculptors entered the first competition, which closed June 30, from among whom six were selected to prepare models for re-submission, each receiving \$1000, with the possibility of executing the work. The second stage of this competition closed December 31, with the promise of a decision shortly thereafter. Eighty sculptors entered the Stonewall Jackson competition, of whom Joseph Pollia of New York City was declared the winner. The Jefferson statue competition was under the auspices of the Jefferson Memorial Committee, and that of the Stonewall Jackson commission, under the State of Virginia. Competitors in both instances were registered from all parts of the country.

During 1939, two competitions for sculpture were held by the Division of Fine Arts, and numerous commissions previously given for the decoration of Federal buildings were completed. Under the WPA Federal Art Project 37,000 works were executed, the majority of which were distributed to tax-supported institutions.

Jo Davidson's statue of Walt Whitman, commissioned by W. Averill Harriman, found placement in 1939 in Bear Mountain State Park. A collection of portraits modeled by Jo Davidson of "Loyalist Leaders in Spain" was exhibited in Washington and other cities before the close of the Spanish war to raise money for the Spanish Children's Milk Fund. The statue of William Cooper Proctor, by Ernest Bruce Haswell of Cincinnati, was unveiled on the grounds of the

Proctor and Gamble industrial plant Ivorydale, Ohio.

Lehmbruck's "Kneeling Woman," shown in the famous Armory Show in New York, 1913, came back to this country in 1939 to take up permanent residence here. Discarded from a German Museum as "degenerate art," it was purchased by the Museum of Modern Art, New York.

Two important books on sculpture were published during 1939: *The Sculptor's Way*, by Brenda Putnam, and *Sculpture Inside and Out*, by Malvina Hoffman.

See ART EXHIBITIONS; ART MUSEUMS; ART SALES.

LEILA MECHLIN.

SECOND INTERNATIONAL. See SOCIALISM.

SECURITIES AND EXCHANGE COMMISSION (SEC). See FINANCIAL REVIEW.

SEISMOLOGY. The Seismological Committee of the British Association initiated, in 1911, the work of collating the records of earthquakes all over the world. The work of computing the epicenters was first undertaken by Milne and on his death H. H. Turner continued it. The determination of the epicenters is based on least square solutions of the recorded times of arrival of P waves at the different stations and now covers accurately the earthquakes recorded in the 20-year period 1913-32. During this period 7940 shocks have had epicenters computed, and these shocks originated in 2865 separate and distinct epicenters. These epicenters are scattered all over the globe, but are much more dense in some regions than in others. Epicenters are especially dense in the Mediterranean region and along the western boundary of the Pacific Ocean and are considerably dense on the eastern boundary of the Pacific. Of the 2865 epicenters, 30 were classed by Turner as shallow focus and 350 as deep focus. The deep focus epicenters are concentrated on the western boundary of the Pacific and appear to be lacking in the Mediterranean region. Miss Bellamy has pointed out from these data the need for a more uniform distribution of seismological stations. While approximately one-third of the recorded earthquakes in this 20-year period occurred in the southern hemisphere, not one-eighth of the existing 500 seismological stations are located in that hemisphere. It is evident that this uneven distribution of stations affects the distribution of recorded epicenters, and it is to be desired that new stations, with the accurate timing now made possible by the wireless broadcast of time signals, should be established in the Southern Hemisphere.

A new seismological station was established at Lincoln, Neb., jointly by the U.S. Coast and Geodetic Survey and the Wesleyan University. Another new seismological station was established near Bogotá, Columbia. It is at a height of about 9000 feet above sea level in the Northern Andes mountains and is thus one of the highest seismological stations in the world. It was made possible by a grant of the Carnegie Corporation of New York to the Jesuit Seismological Association. This new station fills a very noticeable gap in the map of seismological observatories and will supply a definitely seismic area with good observational facilities.

The United States Antarctic Expedition proposes to install a seismograph, if possible on a rock foundation, near the place where the expe-

dition will establish its base. See EARTHQUAKES.

Bibliography: L. D. Leet, *Practical Seismology and Seismic Prospecting* (New York); John Milne, *Earthquakes*, new ed. revised by E. W. Lee (London).

RICHMOND T. ZOCH.

SELANGOR. See FEDERATED MALAY STATES.

SELENOPHILE PLANTS. See SOILS.

SELIGMAN, sĕl'ig-man, EDWIN ROBERT ANDERSON. An American economist, died at Lake Placid, N. Y., July 18, 1939. He was born in New York, Apr. 25, 1861, and educated at Columbia University (A.B., 1879). After studying for three years in the universities of Berlin, Heidelberg, Geneva, and Paris, he returned and entered the schools of political economy and law at Columbia (LL.B., 1884; Ph.D., 1885). He then joined the faculty of the University as a lecturer on economics, becoming successively adjunct professor of political economy (1888-91), professor of political economy and finance (1891-1904), McVickar professor of political economy (1904-31), and professor emeritus in residence thereafter.

The cloistered halls of a university, however, were not for him. In 1894 he joined the Committee of 70, which effected a clean-up of municipal politics and elected a reform administration in New York City. Subsequently he was a member of the Committee of 250 and of the Committee of 15. A recognized authority on taxation, he served on many city, state, and national committees, including the Mayor's advisory committee on taxation and finance (1905), a special State Tax Committee (1906), and President Theodore Roosevelt's committee on Statistical Reorganization (1908). During 1905-10 he was chairman of the trustees of the Bureau of Municipal Research and of the Mayor's Tax Committee during 1914-16. Also, he was expert adviser to the Joint Legislative Tax Committee (1919-22) and a member of the N. Y. State Tax Commission (1929-31). During 1918-25 he was adviser to the committee of ways and means of Congress and during 1919-22, a member of the Advisory Committee on the U. S. Census. In 1921 he was a member of the President's Unemployment Conference. Outside the United States his advice was as eagerly sought. He was an expert for the League of Nations Committee on Economics and Finance during 1922-23, and in 1931 he was invited by the Cuban government to make a study of the Cuban fiscal system. His report was considered a model of its kind.

The dean of American economists, Dr. Seligman was one of the founders of the American Economic Association in 1885 and served as its president in 1902-04. He organized the *Political Science Quarterly* in 1886 and was thereafter its editor, and also edited the *Columbia Series in History, Economics and Public Law*, and the 15-volume *Encyclopedia of the Social Sciences*. In 1930 he sold his economics library, valued at \$1,000,000 and which he had collected for 30 years, to Columbia University for half its cost. Dr. Seligman was an opponent of the sales tax and, although admitting its abuses, he favored installment selling. In national affairs he was an ardent advocate of the gold standard and favored cancellation of the war debts.

A prolific writer on economic subjects, his works included *Railway Tariffs and the Interstate Commerce Law* (1887), *Finance Statistics of American Commonwealths* (1889), *The Shift-*

ing and Incidence of Taxation (1892; 5th ed., 1927), *Progressive Taxation in Theory and Practice* (1894; 2d ed., 1908), *Essays in Taxation* (1895; 10th ed., 1925), *Two Chapters on Mediæval Guilds of England* (1887), *Economic Interpretation of History* (2d ed., 1937), *Principles of Economics* (1905; 12th ed., 1929), *The Income Tax* (1911; 2d ed., 1914), *Currency Inflation and Public Debts* (1921), *Essays in Economics* (1925), *Studies in Public Finance* (1925), *The Economics of Installment Selling* (1927), *Double Taxation and International Fiscal Cooperation* (1928), *The Economics of Farm Relief* (1929), and *Price Cutting and Price Maintenance* (1932).

The recipient of honorary degrees, Dr. Seligman held membership in many organizations, American and foreign, and served as president of the National Taxation Association (1913-15) and the National Urban League (1912-14), and after 1932 was vice president of the Citizens Budget Commission, New York.

SENATE. See CONGRESS, U.S.; UNITED STATES.

SENEGAL. See FRENCH WEST AFRICA.

SENSITIZED MATERIALS. See PHOTOGRAPHY.

SERBIA. See YUGOSLAVIA.

SERBIAN ORTHODOX CHURCH. See RELIGIOUS ORGANIZATIONS.

SEVENTH DAY ADVENTISTS. See ADVENTISTS.

SEWERAGE AND SEWAGE PURIFICATION. Notwithstanding the many communities that, thanks to Federal Aid, have been provided with sewerage systems in the past few years, only a little over half of the 13,000 municipalities that have public water supplies are blessed with sewers to carry away the polluted water from plumbing systems. Of perhaps 7000 cities and towns having sewers the sewage of about 4700 is treated. In many of the communities not all the population has running water and not all of the houses with water-service pipes are connected with the sewers. Moreover, some of the sewage-treatment works serve only a part of the city. Many do not attempt to do more than can be effected by screening or by sedimentation—which in some cases is sufficient. Nevertheless, great progress is being made in this branch of municipal cleansing. (For a detailed summary by States, with number of sewerage systems, purification works, and the many types of treatment, see *Engineering News-Record*, Jan. 19, 1939.)

The largest urban center in the world in which all sewage is treated to a high degree is the Sanitary District of Chicago. On November 6 the district put into use its Southwest activated-sludge plant, with a daily capacity of 400-million gallons. Besides this activated-sludge plant, which is the largest in existence, the district also has two other plants of that type in use. These, with an Imhoff tank installation adjacent to the newest plant, serve an estimated population of 4,684,000, besides industrial wastes equivalent to the sewage of 1,810,000 people. At the new activated-sludge plant the raw sewage is pumped to preliminary settling tanks, then flows to aeration tanks for activation, then to final settling tanks. From the latter the effluent goes to the Chicago Sanitary and Ship Canal and thence through the Des Plaines and Illinois rivers to the Mississippi River. Final sludge is passed through concentration tanks, vacuum filters, disintegrators, and then either blown into incinerators or diverted for

sale as fertilizer. (See article by W. H. Trinkhaus, chief engineer, Sanitary District, *Civil Engineering*, May, 1939.)

At Buffalo, N. Y., a 150-million-gallon partial treatment plant, although put in use in 1938, was fully completed and dedicated on Sept. 12, 1939. Before sedimentation, the sewage is chlorinated for odor control and to protect downstream water supplies. Four incinerators with a daily capacity of 100 tons each have been provided to burn either raw, partly digested, or digested sludge. After flash-drying, the sludge may be applied to the furnaces through nozzles, like powdered coal, or it may be diverted for sale as a fertilizer, as at Chicago. Including a large item for intercepting sewers, the Buffalo project cost \$15,000,000. A large further outlay to rectify the sewerage system, particularly storm drainage, is contemplated. A unique sewage-treatment plant was completed by the city of Niagara Falls, N. Y. Coke-mat filters resting on fine screens remove suspended matter. Chlorine kills bacteria not intercepted by the screens. Sludge is incinerated. The plant is located in Niagara River Gorge. The chimney stack of the incinerator is carried above the level of the banks of the Gorge. (See *Municipal Sanitation*, July, 1939.)

At Cleveland, Ohio, a sewer rental plan to meet operating and maintenance charges of the city's intercepting sewers and three sewage treatment works was being studied by an advisory board of engineers. If adopted, Cleveland will be the largest of many American cities which charge for the use of sewers. Nearing completion in November for Detroit, Mich., was a plant to remove 50 to 60 per cent of suspended solids and to disinfect the effluent. It was designed for a population of 2,400,000, but immense intercepting sewers, a pump house, grit chambers, and effluent outlet conduit are provided for an ultimate population of 4,000,000. After passing through rough screening racks and grit chambers the sewage goes to rectangular settling tanks equipped with mechanism for removing scum and sludge. Nine 600-ton tanks deliver chlorine for disinfection of the effluent from the settling tanks. Before incineration an eighth of the sludge will be pumped to a huge elutriation or washing plant to decrease the quantity of chemicals used to prepare it for reduction in volume by digestion in tanks with floating covers. Gas from the digestors will be used to heat the sludge being digested and to produce gas-engine power. The elutriated and digested sludge, with sludge direct from the settling tanks, will be conditioned with chemicals and then dewatered on rotary cylindrical vacuum filters. The resulting sludge cake, together with screenings, grit, and solids, will be burned in four circular, multiple-hearth incinerators, each with a daily capacity of 300 tons of 70 per cent moisture filter-cake. Waste waters from the elutriation and digestion tanks and the vacuum filters will be returned to the sedimentation tanks for retreatment. The cost of the intercepting sewers and treatment works will be about \$22,635,000. (Condensed from a statement supplied for *THE INTERNATIONAL YEAR BOOK* by G. R. Thomson, city engineer of Detroit. See also article by Thomson and Morrill, *Municipal Sanitation*, November, 1939.)

In continuation of New York City's extensive long-time programme, a 40-million gallon a day plant on Tallman's Island and a 40-million gallon plant on Bowery Bay were put into use; a 65-

million plant on Jamaica Bay was under construction; a 60-million plant for the 26th ward, Brooklyn Borough, was being designed; all are of the activated-sludge type. At Baltimore, Md., the sewage-treatment plant put into use in 1911 has been largely improved in the past few years. The original plant consisted of bar screens and settling tanks, trickling filters, and open-air sludge-drying beds, all but filters being manually cleaned. Additions completed or in progress include mechanically-cleaned bar screens and detritors or grit chambers, sludge digestion tanks; means for the elutriation and vacuum filtration of sludge; and a 20-million gallon activated-sludge plant. (See *Engineering News-Record*, Jan. 5, 1939.)

At Hibbing, Minn., two trickling filters, covered for protection against severe winter conditions, were completed. For structural economy, the beds were made circular in plan and the domes were semi-elliptical shells of reinforced-concrete only $3\frac{1}{2}$ to 6 in. thick. By using elliptical instead of spherical-shaped domes the height was only 32 ft. instead of 75 ft. (See *Engineering News-Record*, Nov. 9, 1939.) An ocean outfall at Miami Beach, Fla., was giving satisfaction after a year's use. It rests in a rock trench 7000 ft. long and discharges sewage at a depth of 40 ft. into northward-flowing currents for disposal by dilution. Plans have been made for an ocean outfall at Puerto Cabello, Venezuela. See also GARBAGE.

Bibliography. American Public Works Association and others, *Sewer Rentals* (Chicago); Federation of Sewage Works Associations, *Modern Sewage Disposal*, a symposium (New York); Imhoff, *Taschenbuch der Städtewasserung* (Munich and Berlin, Germany).

M. N. BAKER

SEYCHELLES, sā'shēl'; -shēlz'. A British colony consisting of 92 islands in the Indian Ocean. Mahé (55 sq. mi.; pop., 25,367) and Praslin are the largest islands. Total area, 156 square miles; total population (Jan. 1, 1938, estimate), 30,940. Capital, Victoria (on the island of Mahé).

Copra (5600 metric tons in 1937), cinnamon, phosphate guano, patchouli and other essential oils, and fresh fish are the chief products. In 1937 imports totaled Rs1,263,351; exports, Rs1,503,310; revenue, Rs1,008,872; expenditure, Rs903,902 (Rupee averaged \$0.3733 for 1937). The government is administered by a governor assisted by an executive council and a legislative council. Governor and Commander-in-Chief, Sir Arthur F. Grimble.

SHAN STATES. See BURMA.

SHASTA DAM. See DAMS.

SHEEP. See LIVESTOCK.

SHIPBUILDING. At the outbreak of war in Europe, early in September, 1939, there was increased activity in the shipbuilding industry. Reliable data on foreign construction is not available. Doubtless warships were given preference over merchant, and the merchant shipbuilding activities of the U.S. Maritime Commission exceeded that of any country in Europe. The Commission's present program calls for 500 ships to be built during the 10 years ending 1948, a goal of 4,000,000 gross tons. During 1939, contracts for 91 vessels were awarded, and on December 21 the twenty-first vessel, *S. S. Lightning*, was delivered to the American Pioneer Line for service from North Atlantic ports to the Far East and Australia and

MERCHANT VESSELS UNDER CONSTRUCTION IN THE WORLD*

Where building	Steamers		Motorships		Sail & barges		Total	
	No.	Gross tonnage	No.	Gross tonnage	No.	Gross tonnage	No.	Gross tonnage
Great Britain & Ireland.....	111	432,605	75	357,995	3	855	189	791,455
Other Countries	179	789,007	335	1,266,712	16	12,118	530	2,067,837
Total for the World...	290	1,221,612	410	1,624,707	19	12,973	719	2,859,292

* Under construction, June 30, 1939. The total gross is 155,625 tons more than for the quarter ending Mar. 30, 1939, and 32,390 tons more than of June 30, 1938. Figures given are from *Lloyd's Register*

New Zealand. The shipbuilding program for 1940 will include at least two passenger liners of about the same size as the *America* for transpacific service.

Returns compiled by Lloyd's Register of Shipping, which take into account only vessels 100 gross tons and upwards the construction of which has actually commenced, show that there were 719 merchant vessels of 2,859,292 gross tons under construction in the world, excluding U.S.S.R. at the close of the quarter, June 30, 1939.

In the United States, the *America*, the largest passenger vessel ever built in an American yard, was launched August 31, 1939, at Newport News, Va. Of about 35,440 tons displacement, she is 723 ft. long, 93 ft. beam, and has a loaded draft of 32 ft. 6 ins. Over 1200 passengers will be carried in first, tourist, and third class.

The U.S. Maritime Commission placed orders for several standard types of vessels known as C-1, C-2, and C-3, also for others that were designed for specific runs as from New York to East Africa. C-1 type were designed to run on trade routes where speed is not an important consideration and large cargoes are not continuously available. They are the smallest of the Commission's vessels, being 390 ft. long, 60 ft. beam, 37 ft. 6 ins. deep. Some are driven by steam turbines and others by Diesel engines. The C-2 type is larger than the C-1, has accommodations for 12 passengers, is 435 ft. long, 63 ft. beam, 40 ft. 6 ins. deep, and is driven by either a steam turbine or a Diesel engine at a speed of 15½ knots per hour. The C-3 type has greater speed and cargo capacity than C-1 or C-2, yet this type can be converted without drastic alterations into passenger vessels. C-3 vessels are 465 ft. long, 69 ft. 6 ins. beam, 42 ft. 6 ins. deep, and have a speed of 16½ knots.

SEC ELECTRICAL MARINE ENGINEERING.

The first ocean-going merchant vessel to be launched on the Pacific coast since the World War, was launched at Oakland, Cal., on Sept. 15, 1939. This vessel, christened *Sea Arrow*, is of the C-3 type. The sailing of the *Cristobal*, August 17, 1939 from New York to the Panama Canal Zone, marked the completion of the present shipbuilding program of the Panama Line. Included in the program were the steamships *Panama* and *Ancon*, which like the *Cristobal* are 471 ft. 6 ins. long, 64 ft. beam, 26 ft. draft, gross tonnage 10,021, service speed 16½ knots.

The December bulletin of the American Bureau of Shipping, covering vessels under construction or under contract in United States shipyards on Dec. 1, 1939, lists 240 craft of 1,181,795 gross tons compared with 159 of 555,310 gross tons on Dec. 1, 1938. In the 1939 list, the sea going vessels number 144, with a total gross tonnage of 1,144,350.

Relative to foreign tonnage under construction, according to Lloyd's Register of Shipping on

June 30, 1939 (no reports later than this date were published in 1939), the outstanding vessels are, one of over 40,000 gross tons and another of over 30,000 being built in Great Britain, one of over 30,000 in Germany, and a motorship of over 25,000 in Italy. Of those completed in 1939, from the standpoints of size, power, and speed, the motorship *Oranje*, of the Netherland Steamship Co., is one of the finest of her class. The *Oranje* was built for service between Amsterdam, Holland, and Dutch East Indies. She is 630 ft. long, 83 ft. 6 ins. beam, draft 28 ft. 10 ins., is driven by three 12-cylinder Diesel engines of 12,500 h.p. each, at a speed of 21 knots, and can carry 747 passengers.

France, according to Lloyds on June 30, 1939, had under construction 11 vessels with a total gross tonnage of 95,130. Included in these figures, were three cargo motorships 459 ft. 4 ins. long, 61 ft. 8 ins. beam, 26 ft. 5 ins. draft, speed 15 knots, for the account of the French government. Although built for the government, the motorships were scheduled to be chartered to private companies.

In Germany on June 30, 1939 there were being built 125 vessels of 347,832 gross tons. There was considerable congestion in German shipyards due to orders for foreign customers. Although no statistics are available for 1939, foreign orders accounted for 57 per cent of the output of German yards in 1938 compared to 6 per cent in 1913.

Prior to the European War, shipyards in Holland, Italy, Norway, and Sweden were busy on merchant construction. Particular attention is called to two turbine electric-driven passenger and cargo liners being built by the Netherland Shipbuilding Co., Amsterdam, for the Soviet Union. These vessels are 436 ft. long, 60 ft. 2 ins. beam, 20 ft. 2 ins. draft, and will have a speed of 20 knots. A large passenger and cargo ship, the *Klipfontein*, was built in Holland for the United Netherlands Navigation Co. for their Holland-Africa service. This vessel is 490 ft. long, 62 ft. 6 ins. beam, 30 ft. 3 ins. draft, is driven by two sets of Diesel engines, at a speed of 20½ knots. Still another was the *Oranje* previously mentioned. Tonnage in Italian yards amounted on June 30, 1939, to 42 ships of 224,616 gross tons. Included in these figures are two passenger and cargo motorships built on the barter principle for Norwegian owners. Main dimensions of these vessels, 400 ft. long, 55 ft. 6 ins. beam, 25 ft. 5 ins. draft, speed 13 knots. Norway on June 30th was building 33 ships of 52,026 gross tons, and Sweden 27 of 160,620 gross tons.

Ships under construction at Japan's leading yards at the end of August, 1939, numbered 243 vessels of more than 1,000 tons each, with an aggregate of 1,179,240 gross tons, according to the Japan Shipping Club. Included in this tonnage were 201 cargo ships with a total of 958,770 tons, 36 passenger and cargo ships with a total of 188,420 tons, 2 tankers aggregating 27,000 tons, and

4 special ships aggregating 5050 tons. See NAVAL PROGRESS.

CHAS. H. HUGHES.

SHIPPING. The breaking out of war in Europe early in September, 1939, seriously disrupted normal shipping operations throughout the world. At the opening of hostilities, merchant ship tonnage was distributed thus:

Country	Gross tons	Country	Gross tons
British Empire...	21,215,261	Netherlands. . . .	2,972,871
United States...	14,631,991	France.	2,952,975
Japan.....	5,629,845	Greece.	1,780,666
Norway.....	4,834,902	Sweden.	1,581,919
Germany.....	4,492,708	U.S.S.R.	1,315,766
Italy.....	3,448,453	Denmark.. . .	1,176,173

German mines in the North and Baltic seas, the use of submarines and warships to seize and sink British and French vessels, and to search those of neutral nations for contrabands of war, soon involved Sweden, Norway, United States, and other nations in protests and discussions.

The passage of the Neutrality Act by Congress in November, 1939, naturally caused a serious loss of business and employment to U.S. steamship companies. Some to keep their ships active, changed their routes to South American ports, others changed the registry of their vessels to neutral countries, as Panama, intending to sail in the war zone, but this was opposed by the Federal government. To take care of officers, engineers, and seamen thrown out of employment, steps were taken by the Maritime Commission to find them shore positions, or to give them opportunities for further training in the Marine Service, an organization set up by the Commission to train men for deck, engine room, and steward departments.

See EUROPEAN WAR under *Shipping Losses*.

Italian shipping was particularly active during the latter part of 1939. The operation of the U.S. Neutrality Act and the French-British embargo of December 2d on all shipments to and from Germany, caused ship owners to avoid the Bay of Biscay and the English Channel and to select Naples, Genoa, and other Italian ports. Thus vessels from the Far East with shipments to Holland and Belgium, stop at Naples, where passengers and cargo are landed and are then transported overland. The Norwegian port of Bergen, outside of the area covered by the Neutrality Act, has increased in importance as a shipping center. The American Scantic Line resumed its service between New York and Bergen late in November. Other lines are using Bergen and transshipping overland to different parts of Norway, Sweden, and Northern Europe. All such shipments may become more and more difficult as time goes on.

Quite different from the uncertain shipping conditions on the Atlantic Ocean were those on the Great Lakes. Iron ore, wheat, and other products shipped through the Soo Locks (Sault Ste. Marie, Mich.) during the month of November amounted to 10,437,879 tons, surpassed only three times in recent years—1917, 1923, and 1928. Total shipments to the close of navigation for 1939 are estimated at 70,000,000 tons.

Of interest to shipping men was the publishing in 1939 of the Register of Shipping of U.S.S.R. According to the register, the Soviet has 664 vessels of all types and classes. There are few passenger vessels and tankers, but 303 cargo vessels

ranging from 1000 to 5000 tons. The register is very complete, giving more details of ships than is found in other registers. Of the ships over 1000 tons, most have been built at Leningrad Shipbuilding Co., Baltic Shipbuilding & Engineering Works, and at Sormovo Works, Sormovo.

Maritime Commission. According to Merchant Marine Act of 1936, and subsequent marine and shipping acts passed by Congress, the Maritime Commission is given broad authority over the building and operating of U.S. vessels. Not only does the Commission build for its own account, but also regulates, or is in a position to, companies that are operating coastwise and overseas vessels, it is also interested in the personnel employed on ships, and in the establishing of schools for training young men to become officers and engineers. The Commission's financial interests include operating and construction subsidies paid only to ships in the overseas or foreign trade, and mortgages. During the past year the Commission has continued its policy in changing indirect subsidies based on foreign mail contracts to direct subsidies based on the difference between U.S. and foreign costs of shipbuilding and operating. Operators of Commission's ships include the following companies, U.S. Lines, Standard Oil Co. of N. J., Am. Export Lines, Mississippi Shipping Co., Keystone Tankship Corporation, Moore-McCormack Lines, Am. Hampton Road-Yankee Line, Am. Pioneer Line, Grace Line, and Seas Shipping Co. The Commission expects by the sale of services it now operates, to be out of the operating business early in 1940.

Before starting on its shipbuilding activities the Maritime Commission made a thorough study of foreign trade routes and then proceeded to design ships (see SHIPBUILDING) which would meet the requirements of the routes. To prevent the transfer of 20-year old ships that have been engaged in foreign trade into coastwise and intercoastal trade, the Commission recommended to Congress, and Congress adopted in 1939, the "turn in and build" provision of the Merchant Marine Act. This provision allows the Commission to acquire any obsolete vessel in exchange for an allowance of credit upon a new vessel to be operated under U.S. ownership and registry, thus giving ship owners an excellent opportunity to replace old tonnage. Only vessels older than 17 years, owned by citizens of the United States for at least three years are eligible for the "turn in and build" provision.

Due to emergencies arising from the war in Europe, the Commission announced on Sept. 20, 1939, that personnel on vessels which it owns and operates through managing agents in the North Atlantic trades will receive an emergency increase of 25 per cent in their base pay. An allowance of \$150 is provided for each man to cover possible loss of clothing and personal effects arising out of emergencies due to the war. In the event of internment of its seagoing personnel, base pay plus the additional 25 per cent emergency compensation shall continue for the period of internment.

Among the activities of the Commission is the operating of a Marine Service, which includes training stations at St. Petersburg, Fla., Government Island in San Francisco Bay, Hoffman Island in New York Harbor, and Fort Trumbull, New London, Conn., besides two schoolships. The training program laid out contemplates training 3000 unlicensed seamen and 500 officers a year.

Maritime Labor Board. This Board was established by the Merchant Marine Act of 1936 as amended, as an independent agency in the executive branch of the Government, and is composed of three members, appointed by the President, by and with the advice and consent of the Senate. It is the duty of the Board upon request of either the duly selected representatives of a maritime employer or employers, or of their employees who are parties to the making of a labor agreement, to encourage and assist in the making of such agreement, or, upon the request of both parties at interest, to assist in the interpretation of the provisions of an agreement already in existence.

During 1939 members of the Board held meetings at New York, San Francisco, and other ports, with such labor and employer organizations as the National Maritime Union, American Merchant Marine Institute, and others, to study both sides of the labor situation. On or before Mar. 1, 1940, the Board will submit to the President and to Congress a comprehensive plan for the establishment of a permanent Federal policy for the amicable adjustment of all disputes between maritime employers and employees and for the stabilization of maritime labor relations. Furthermore the Board will seek to secure through its mediatory efforts agreement between employers and employees upon the plan it is required to submit.

See COAST GUARD; DISASTERS; NAVAL PROGRESS; NEUTRALITY; SHIPBUILDING.

CHAS. H. HUGHES.

SHOE INDUSTRY. Shoes are a measure of standards of living, because they are universally worn and, through machine manufacture, similar in types the world over. In the United States 3-26 hours of work will buy an average work shoe, in Germany it takes 8:09 hours of work, in Great Britain 9:03 hours equals one pair of shoes. In Sweden 9:29 hours, in Belgium 10:49 hours work, in France 12:34 hours, and in Italy 24:22 hours of work must be done to obtain a pair of shoes. By this shoe-wage stick the rest of the world pays more—measurable in terms of normal times. The last four months of the year, however, were influenced by war economics indicating in Europe a trend upward in use of more shoes—for war and civilian use—costing more work-hours of pay.

United States shoe production for 1939 will reach a new record of 419 million pairs, or 3.15 pairs per capita. This is 4 million pairs over the previous peak of 415 million pairs in 1936 and 58 million pairs over 1929. Part of this ten-year increase can be attributed to a population growth of 10 million people, but by far the increased consumption of shoes is due to lower prices and the greatly increased purchase of shoes for style and special uses. But while the United States purchase of shoes has increased by 58 million pairs, the public has paid about 300 million dollars less, or approximately one billion one hundred million dollars for shoes in 1939. The purchase of shoes for style and special uses is increasing, such as the growing purchase of shoes for wear with different costumes, for beach wear, for leisure, health, and year-round sports. Work shoes for specialized uses increased in 1939 with more types and materials introduced into shoe making to satisfy complex uses. There was an increase in the production of army shoes all over the world (in the United States only for domestic use as no European contracts were placed in 1939). In-

creased production of army footwear in Europe curtailed regular shoe manufacture to the necessities of the people. Shoe imports into England and the European countries has ceased by regulation. Importation of shoes to the United States has sharply decreased. World production of shoes and rubber footwear is as follows: (estimated) Europe, 510,000,000 pairs; North America, 490,000,000 pairs; South America, 55,000,000 pairs; Asia and Oceania, 70,000,000 pairs; Africa, 25,000,000 pairs.

There is a freedom of prices of leather and shoes on the world markets, a common level of price, with little subsidy or control anywhere—but war may alter the situation. Markets previously dependent on the United States, England, and Germany for machine made shoes, are changing to self-contained shoe producers. The growth of nationalism has been accompanied by restriction of imports and encouragement of home sources of supply.

The figures which have been released by Director William L. Austin, Bureau of the Census, Department of Commerce, Washington, D. C., report a record shoe production of boots, shoes, and slippers, other than rubber, for 1939 of 419,088,225 pairs. This is an increase of approximately 28 million pairs over the 1938 production of 390,746,226 pairs, and an increase of 4 million pairs over the previous record of 415,227,000 pairs in 1936. The production for the twelve months of 1939 is broken down by classes as follows:

High and low cut boots and shoes (leather), total	352,783,249
Men's.	
Dress	76,265,380
Work	27,290,617
Youths' and boys'	17,030,300
Women's	164,920,276
Misses' and children's	43,689,904
Infant's	23,586,772
Athletic*	3,784,154
Part-leather and part-fabric	7,114,781
All-fabric (satin, canvas, etc.)*	4,975,707
Slippers and moccasins for house wear, total	44,754,410
All-leather	13,280,217
Part-leather, felt, etc.	31,474,193
All other footwear ^b	5,675,924

* Excludes footwear with fabric uppers and rubber soles.

^b Includes barefoot sandals, beach sandals, theatrical footwear, and other footwear not distributed as to kind.

This production of 419 million pairs is divided among 877 factories distributed by States as follows:

State	Factories represented December 1939	Production 1939
Illinois	57	31,342,216
Maine	49	28,115,296
Massachusetts	229	80,124,164
Missouri	59	48,496,404
New Hampshire	62	37,843,933
New York	146	71,767,159
Ohio	28	16,763,882
Pennsylvania	79	32,275,599
Wisconsin	50	16,665,244
Other States	118	55,694,328
United States	877	419,088,225

JOHN F. W. ANDERSON.

SIAM. See THAILAND.

SIBERIA. The general name of the Asiatic part of the U.S.S.R., extending east from the Ural Mountains to the Pacific and north from Manchoukuo, Mongolia, and the Kazakh S.S.R. to the Arctic. Siberia is divided into administrative units of the Russian Soviet Federated Social-

ist Republic (q.v.). Estimated total area, 4,994,819 square miles; estimated population (1931), 21,500,800. See also UNION OF SOVIET SOCIALIST REPUBLICS.

SIERRA LEONE, sī-ě'r'a lê-ō'ně. A British colony and protectorate in West Africa. Total area, 27,925 square miles, of which the parts administered as colony (Sierra Leone peninsula, the Tasso, Banana, and York islands, and the town of Bonthe on Sherbro island) equaled 256 square miles. Total population (1931 census), 1,768,480 of whom 96,422 were in the colony. Freetown, the capital (63,758 inhabitants in 1937), has the finest natural harbor in West Africa and is a second-class Imperial fueling station.

Production and Trade. The chief products are kola nuts, palm kernels, ginger, rice, ground-nuts, piassava, cassava, hides, diamonds, gold, iron ore, platinum, and chromite. Mineral production (1938) included iron ore, 861,955 tons; diamonds, 689,622 carats; gold, 32,980 oz. troy; chromite, 1300 tons; platinum, 180 oz. troy. Deposits of ilmenite exist but they are not worked. In 1938 (including bullion and specie), imports were valued at £1,500,342; exports (including re-exports of £44,734) totaled £2,388,929 of which diamonds accounted for £858,055, iron ore £646,421, palm kernels £457,031, gold £207,940, and ginger £60,680. Cotton piece goods, coal, tobacco, wearing apparel, and foodstuffs were the main imports.

Communications. In 1938, there were 923 miles of roads, 311 miles of open line (2 ft. 6 in. gauge) railway which carried 663,168 passengers and 67,998 tons of freight, a motor-bus service which carried 303,832 passengers, 790 miles of telegraph line, and 850 miles of telephone line. There is a radio-broadcast service owned and operated by the government. Shipping aggregating 2,712,979 tons entered the ports during 1938. A weekly air service in both directions between Freetown and Bathurst (Gambia), which links with the Empire air service, has been in operation since 1938.

Government. For the calendar year 1938, revenue totaled £886,149; expenditure, £910,077. The public debt on Dec. 31, 1938, totaled £1,288,259 against which the sinking funds amounted to £128,678. The colony and protectorate are administered by a governor who is assisted by an executive council of 5 members. There is a legislative council of 23 members (the governor as president, 11 official members, 7 nominated unofficial members of whom 3 must be paramount chiefs of the protectorate, and 3 elected members). The legislative council has the power to legislate for both the colony and the protectorate. Governor and Commander-in-Chief, Sir D. J. Jardine (appointed May 21, 1937).

SILK. See TEXTILES.

SILVER. Political incidents marked the economic course of silver in 1939 as in previous years. Controversy flared up in the United States Congress early in the year with the introduction of bills by advocates and opponents of the Government's silver-buying program. The question finally came to a head about mid-year with the approaching expiration (June 30) of the President's monetary powers and Exchange Stabilization Fund, which included the authority to purchase domestic silver at decreed prices. On June 26 amendments were voted in the Senate that limited the President's monetary powers, in-

creased the Treasury's purchase price for domestic silver, and prohibited the further purchase of foreign silver. The House disagreed, and the resulting conference failed to adjust differences until July 5. The result was an extension of the life of the Stabilization Fund and the President's monetary powers through June 30, 1941. The provisions of the Silver Purchase Act were left intact; but most important, the purchase of newly mined domestic silver after June 30, 1939, and its price, were made a statutory matter, not subject to Presidential decree. The price was then set at 71.11¢ per oz. For the first half of 1939 the price was 64.64¢ by Presidential proclamation.

The New York official quotation was 42.75¢ per oz. from January to May, inclusive, after which it declined irregularly, and closed the year at 34.75¢.

World silver production in 1939 and 1938, by countries, as estimated by Handy and Harman in their annual review, is shown in the accompanying Table I.

TABLE I—WORLD SILVER PRODUCTION
[In millions of fine ounces]

Country	1938	1939
United States.	58.8	57.0
Mexico.	84.0	81.0
Canada.	23.8	24.7
South America.	32.4	34.7
All other countries.	67.0	68.6
Total Production.	266.0	266.0

World silver consumption is estimated by the same authority at 441,300,000 oz. in 1939, compared with 510,300,000 oz. in 1938. U. S. Government acquisitions in 1939 were 60,600,000 oz. from domestic production and 280,800,000 oz. from open market purchases, a total of 341,400,000 oz. This is substantially lower than in 1938, when total acquisitions were 417,000,000 oz. The reduction occurred mainly in open market purchases. Treasury silver holdings on Dec. 31, 1939 were estimated at 2,930,000,000 oz. including coin in circulation. Nevertheless, on account of new acquisitions of gold during the year, the ratio of silver to gold in the nation's monetary reserves was considerably lower than that 25-75 per cent authorized under the Silver Purchase Act. Since the ratio was established in 1934 the Treasury has been more than one billion oz. short each year of maintaining one-fourth of the value of its monetary reserves in silver. In fact the goal set by the Act is 291,000,000 oz. further away than when the legislation was passed in June, 1934.

Industrial demand for silver in the United States, Canada, England, and Germany in 1939 increased to 65,000,000 oz. as compared with 53,800,000 oz. in 1938. In the United States and Canada the increase was 25 per cent, from 27,500,000 oz. to 34,000,000 oz. Percentage increases in the most important classifications were approximately: sterling silverware, 20 per cent; silver plated ware, 30 per cent; motion pictures, 10 per cent. The trend was in marked contrast to that of 1938, when decreases were shown. Research by the American Silver Producers Association into new industrial uses for silver continued in 1939. Promising outlets were: Coatings, electrical contacts, fungicides, and alloys. Consumption of silver in the purely industrial field showed a marked increase.

Preliminary estimates by the Bureau of Mines of mine production of silver in the United States indicate 65,011,770 fine oz. valued at \$44,129,201, an increase of 3 per cent in quantity and 9 per cent in value over 1938. The increase is attributed to larger output of copper, zinc-lead, and lead ores of which silver is a by-product. Idaho, largest silver producing State since 1933, contributed 26 per cent of total domestic output. The United States production and value, by States and Territories, are recorded in Table II.

TABLE II—UNITED STATES PRODUCTION

<i>State or Territory</i>	<i>Ounces</i>	<i>Value*</i>
Alaska	209,300	\$142,070
Arizona	7,975,540	5,413,700
California	2,612,000	1,772,994
Colorado	8,393,642	5,697,502
Georgia	78	53
Idaho	17,199,600	11,674,880
Illinois	480	326
Maryland	3	2
Michigan	93,200	63,263
Missouri	213,397	144,851
Montana	8,898,450	6,040,160
Nevada	4,066,000	2,759,951
New Mexico	1,423,480	966,241
New York	37,165	25,227
North Carolina	3,650	2,478
Oregon	101,000	68,558
Pennsylvania	12,926	8,774
South Carolina	5,640	3,828
South Dakota	168,600	114,444
Tennessee	32,200	21,857
Texas	1,349,709	916,166
Utah	10,574,987	7,178,173
Virginia	1,780	1,208
Washington	442,200	300,160
Wyoming	75	51
Philippine Islands ^b	1,196,664	812,281
Puerto Rico	4	3
Total 1939	65,011,770	\$44,129,201
Total 1938	61,560,737	39,796,840

* Silver valued at \$0.678 in 1939.

^b Refinery receipts.

H. C. PARMELEE.

SIMMONS COLLEGE. A nonsectarian college for women in Boston, Mass., founded in 1899. The enrollment on Nov. 1, 1939, was 1498. The summer-school enrollment in the School of Nursing in 1939 was 191. The faculty numbered 162. The productive funds of the institution amounted to \$3,630,612, and the income for the year was \$598,121 (exclusive of gifts). There were 86,269 volumes in the libraries. The College received a gift of \$25,000 for the Endowment Fund of the School of Social Work. A new residence hall was ready for occupancy in September. President, Bancroft Beatley, Ed.D., Litt.D.

SINGAPORE. See STRAITS SETTLEMENTS; GREAT BRITAIN under *History*.

SLOVAKIA. See CZECHO-SLOVAKIA, GERMANY, and POLAND under *History*.

SMITH COLLEGE. A nonsectarian college for women in Northampton, Mass., founded in 1871. The enrollment for the autumn of 1939 was 2092, while that for the summer was 261. There were 251 faculty members. The productive funds amounted to \$6,669,848, and the income from such funds was \$226,834. The volumes in the library numbered 266,964. Acting President, Elizabeth Cutter Morrow, B.L., L.H.D., LL.D.

SMITHSONIAN INSTITUTION. An organization founded in 1846 according to the terms of the will of James Smithson of England, who in 1826 bequeathed his property to the United States of America "to found in Washington, under the name of the Smithsonian Institution, an

establishment for the increase and diffusion of knowledge among men." The purposes of the Institution are carried out by scientific research, exploration, and publication. It also administers the following bureaus which are supported by Congressional appropriations: The United States National Museum, National Collection of Fine Arts, Bureau of American Ethnology, International Exchange Service, National Zoological Park, and Astrophysical Observatory. It also administers the Freer Gallery of Art and the Division of Radiation and Organisms. The new National Gallery of Art was established as a bureau of the Institution but is administered by the Board of Trustees of the Gallery. See ART MUSEUMS.

The expendable income of the Institution for 1939, consisting of income from investments, income from miscellaneous sources, and gifts for special objects (excluding income from the Freer endowment) was approximately \$200,000. Its endowment funds (exclusive of the Freer endowment) totaled \$2,022,567. The Institution and the government bureaus under its direction published 99 volumes and pamphlets, of which 162,030 copies were distributed to libraries, educational institutions, and individuals. The secretary is Charles G. Abbot, D.Sc.; the assistant secretary, Alexander Wetmore, Ph.D.

SMUGGLING. See CUSTOMS, BUREAU OF; NARCOTICS CONTROL.

SOBISMINOL. See MEDICINE AND SURGERY.

SOCIAL INSURANCE. See FEDERAL CROP INSURANCE CORPORATION; FEDERAL DEPOSIT INSURANCE CORPORATION; OLD-AGE PENSIONS; RELIEF; SOCIAL SECURITY BOARD.

SOCIALISM. Any description of Socialism as it is in 1939 inevitably suggests a comparison with its position 25 years ago, when the first World War began.

Then Socialism was on the aggressive. In every nation it was challenging the profit system in the name of production for use, and the established institutions of nationalism in the name of internationalism. "Workers of the World, Unite!" was more than a pious—and empty—slogan to millions of men.

Even after Aug. 1, 1914, when Socialism had proved itself unready to avert or stop the war, it remained a force to be reckoned with by all the belligerents. With foreboding or with hope, men expected it to play a great role in making the peace which would end war and introduce a new social order.

By 1936 Socialism which had previously been wiped out in Italy was disastrously defeated in Germany where its enemy, fascism—which however called itself National Socialism—was steadily growing in power; but it had established itself as the major political force in the Scandinavian countries, it had made a revolution in backward Spain, and it had seen its leaders hold office as Prime Ministers in Great Britain and later in France.

But by 1939 although the breakdown of the capitalist nationalist order was tragically evident, Socialism was almost everywhere on the defensive. In Spain, fascism by aid of foreign arms had wiped out with impartial brutality all forms of Socialism. In Great Britain and France, Socialist Parties were still the principal opposition to the governments in office, but they felt obliged to give those governments and the new war they were fighting at least as uncritical support as in 1914 to

1918. The entire attention of the Scandinavian Parties was devoted to the perilous task of preserving national neutrality, and escaping the menace of attack from without. The end of the year saw Stalin's outrageous attack on Finland, in which country the Finnish Socialists gave full support to a national government. In Sweden, also, the government was reorganized so as to make it more nearly a national government than a Socialist-agrarian coalition.

In Russia, Stalin boasted that he had established Socialism, but state capitalism would be a more accurate description of the economics of a dictatorship which in its foreign and domestic policy was becoming less and less distinguishable from fascist totalitarianism.

In 1914 "the final conflict" to the average Socialist lay between private capitalism and a collectivism which he had too easily assumed would be Socialist; that is, administered by the workers of the world for their own well being. In 25 years the world had advanced by giant, though unequal, strides toward collectivism, but not a collectivism which meant plenty, peace, and freedom for the workers. State after state had adopted Socialist "immediate demands" only to make its essential imperialism or totalitarianism more palatable to the workers. The "final conflict" to the thoughtful Socialists turned less on the issue: economic individualism—which is dying—against collectivism, but on the kind and degree of collectivism, and the possibility of democratic control. Totalitarianism had become the great enemy, and the renewal of war threatened to bring automatically the triumph of totalitarianism even in the countries which professed to be fighting to preserve "democracy"—along with their own national interests.

At the beginning of the First World War, there was but one international organization with which avowed Socialist parties were connected—the Second, or Labor and Socialist International. This was the successor of the First International of which Karl Marx was the principal founder. It died in the storms of the Franco-Prussian war.

The Second International, to which the American Socialist Party belongs, was formed in 1889 after the death of Marx. It still lives, and is the Socialist International in contrast to the Third or Communist International formed by Lenin in 1919, with which all the orthodox Communist Parties are connected.

The followers of Lenin's greatest lieutenant, Trotsky, have a shadowy Fourth International of no great numerical strength, and there are a few Socialist Parties or more accurately, Socialist groups, connected with no International.

The Third, or Communist International, was from the beginning dominated by the Russian Party, and the various change in Communist line or policy were dictated by Russian interests and Russian understanding of those interests. The discipline of the Third International, which is to say of Stalin, over the constituent parties is absolute and rigid. Witness their acceptance of the change in line involved in the Stalin-Hitler pact, about which none of them was consulted.

The Second (or Socialist) International has no corresponding discipline of any sort. It is scarcely more than a loose association of parties with avowed Socialist ends. It maintains headquarters at Brussels, Belgium. It is a glorified debating society which since 1933 has not even provided an International Congress as a forum for a gen-

eral debate. It has, however, a representative executive committee.

Within that committee, and to some extent within the constituent parties of the Second International, the spring and summer of 1939 saw the beginning of a sharp discussion. The Austrian Socialists in exile wanted a more unified and aggressive Socialist program for Europe. The Secretary of the International, Dr. Friedrich Adler, felt a similar necessity for effective action. To bring matters to a head, he offered and pressed his resignation.

The Second International is dominated by the British Labor Party, the French Socialist Party, and the Labor and Socialist Parties of the Scandinavian countries, Belgium, and Holland. All these parties were used to political responsibility in their own nation and the leaders of several of them held, or had held, high political offices in their respective countries. In general, therefore, these parties felt, first, that the voting strength of the parties in exile should be reduced in International Congresses; and, second, that nothing whatever should be done to strengthen international control or even moral influence, over the Socialist and Labor Parties in various nations. The British and the Dutch were particularly emphatic on this point.

Before these issues had come to a head, and before final action could be taken on Dr. Adler's resignation, or a successor chosen, war broke out. The year closed without decisive action by the Executive Committee, and with Dr. Adler temporarily continuing as secretary.

The Second International is unanimous in its bitter opposition to the totalitarian state and to the Hitler-Stalin pact. Its parties in Europe can scarcely be said to have an independent Socialist position on the war of great significance. In general, they rationalize as best they can in the light of their Socialist hopes, the national policies of their countries. Thus, the British Labor Party supports the war, but is critical of Chamberlain and the Conservative Government. It refused overtures for any cabinet positions in a national government. The French Socialist Party supports the war, but is sharply critical of its old ally of united front days, Premier Daladier, and voted against government by decree.

On Nov. 1, 1939 appeared the Platform of the Workers' International Front Against War. It denounced the war as imperialist, sought a revolutionary seizure of power by the workers, and the construction of a Socialist United States of Europe. Small parties or groups, perhaps the most important of which is the Independent Labor Party of Great Britain, from seven countries, plus certain groups in exile, form this Workers' International Front Against War.

The American Socialist Party, free from the immediate pressures of the European scene, has maintained a consistent anti-war position. It holds that any peace dictated by victors will necessarily encourage new totalitarian states. It argues that American participation in the war would cost us our own democracy with no corresponding benefit to Europe. The United States out of war can do far more for democracy and for war's victims than in war. It believes in encouraging the maximum possible co-operation of the United States for world peace, and the maximum possible isolation from war. It is sure that "Roosevelt's war would not cure what Wilson's did so much to cause."

Under the New Deal, the Socialist Party, never numerically large, lost in numbers and influence. Former supporters of the Party felt that the New Deal had taken over successfully many of the immediate demands of Socialism, and that it must be supported against reaction. The Communist Party, beginning in 1935, sharply reversed its attitude of extreme opposition to President Roosevelt in favor of a united front. On this new line the Party increased substantially in numbers and more rapidly in influence. In 1938 in New York State it showed greater voting strength in New York than the Socialist. As part of an international united front against fascism, American Communists, sharply in contrast to American Socialists, were supporters of collective security even if necessary to the point of war.

This situation was dramatically changed after the Stalin-Hitler pact. By the end of 1939 Communists were denouncing imperialist war and insisting to Europe that "the Yanks are not coming." But this outward resemblance of the Communist and Socialist positions on war was based on such different reasons, and Socialist condemnation of totalitarianism whether fascist or communist was so great, that the gulf between Communists and Socialists in America deepened. In the country at large, the Stalin-Hitler pact and, most of all, Stalin's invasion of Finland, greatly reduced Communist influence, and in less degree, Communist membership. The same events appeared to be giving to the Socialist Party new strength and influence. See COMMUNISM.

In Socialist ranks at the beginning of 1939, general negotiations were under way to heal a split which had occurred in 1936, at which time certain Right Wing Socialists had formed what was called the Social Democratic Federation, a movement of no great strength or influence save in a very few centers. These negotiations came to a halt with the advent of war because the Social Democratic Federation in New York City took a virtual pro war position. However, the Social Democratic Federation in Reading, Penn., where the movement was strong and the city administration was Socialist, achieved unity with the Socialist Party. The reunited movement lost the municipal election by a very close vote.

See DENMARK, FINLAND, FRANCE, GREAT BRITAIN, MEXICO, NEW ZEALAND, NORWAY, and SWEDEN, under *History*.

NORMAN THOMAS.

SOCIAL PROGRESS, INTERNATIONAL ASSOCIATION FOR. An international association, of which the American Association for Labor Legislation is the American section, created in 1925 by amalgamating three former allied organizations, the International Association for Labor Legislation, the International Social Insurance Committee, and the International Association on Unemployment. See LABOR LEGISLATION, AMERICAN ASSOCIATION FOR.

SOCIAL SECURITY BOARD (SSB). The Social Security Board has administrative responsibility for three Nation-wide programs, designed to bring greater security to the American people. These are old-age and survivors insurance, employment security, and public assistance, as established under the Social Security Act. The first two of these are insurance systems designed to protect wage earners against future want; the third provides immediate cash aid on the basis of need for three groups who are unable to support

themselves—the aged, the blind, and dependent children.

During 1939 two developments of major importance took place: Congress amended the original Social Security Act of 1935; and the President's First Reorganization Plan created the Federal Security Agency, bringing together under it the Social Security Board and five other Federal administrative organizations concerned with similar problems. The changes made in the act materially increase the protection it offers; coordination of related activities makes for an increasingly integrated and effective attack upon basic problems of insecurity.

The Federal system now provides monthly old-age insurance benefits for retired workers after age 65, their wives when they reach 65, and any dependent unmarried children under 18. Monthly benefits are also provided for survivors of insured wage earners who die, for dependent children under 18, for widows if they have such children in their care or when they reach 65, or if there is no widow or child, for dependent parents at age 65. These monthly benefits became payable on Jan. 1, 1940.

The 1939 amendments also increased protection for workers already 65 or nearing that age by providing that employment after age 65 could be counted toward benefits, beginning Jan. 1, 1939. Many older workers, who could not have received monthly benefits under the original plan, will thus be enabled to qualify.

Benefits are financed by taxes on employees and their employers. These taxes go into an Old-Age and Survivors Insurance Trust Fund in the United States Treasury, from which all benefits are paid. Under the 1939 amendments, the tax rate, which began at 1 per cent each for employees and employers in 1937, when the system first went into operation, has been "frozen" at that level until 1943. Thereafter, it increases by $\frac{1}{2}$ per cent every three years until, in 1949, it reaches a maximum of 3 per cent each. This tax applies only to the first \$3000 a year in wages paid to an employee.

By the end of 1939, social security accounts had been set up for nearly 48 million persons. In these individual accounts, maintained by the Social Security Board, each worker's wages in jobs covered by old-age and survivors insurance are recorded. At the close of the year the Board had more than 400 field offices throughout the country; these offices serve workers and their employers in all matters relating to the insurance system.

The employment security program, a joint Federal-State undertaking, provides a twofold service—job insurance and job placement—to protect workers against want during periods of unemployment. One of the important changes brought about by the President's Reorganization Plan was the unification of Federal employment service and unemployment compensation activities. The United States Employment Service and the Board's Bureau of Unemployment Compensation were thus brought together to form a new Bureau of Employment Security under the Board. The program also operates as a unified service in the States. Each State has its own unemployment insurance law under which jobless workers receive weekly out-of-work benefits, and its own employment service which registers the unemployed and helps them find new jobs.

States with laws approved by the Social Security Board receive Federal grants for adminis-

trative expenses of their employment security programs. Employers in such States may credit their contributions to the State unemployment fund against a Federal payroll tax of 3 per cent, levied on employers of eight or more persons in all but a few specifically excluded industries. Up to 90 per cent of this Federal tax may be offset by contributions to the State fund.

Every State, Alaska, Hawaii, and the District of Columbia, is receiving employment security grants from the Federal Government. Nearly 28 million workers throughout the Nation are insured under State unemployment compensation laws. During 1939, weekly benefits totaling nearly \$450,000,000 were paid out to unemployed workers by the various States.

The public assistance program for aid to the needy aged, the needy blind, and dependent children, is also built upon Federal-State co-operation. The Federal Government shares the cost of State payments to needy individuals made under public assistance plans approved by the Social Security Board. By the end of 1939 every State and Territory was participating in the old-age assistance program; 42 jurisdictions had approved plans for aid to the blind, and a like number for aid to dependent children. Under these plans, some 2,600,000 needy men, women, and children were receiving monthly cash payments.

The act, as amended, provides that the Federal Government shall match State payments dollar for dollar up to a combined total per month of \$40 a person for the aged and the blind, and \$18 for the first dependent child and \$12 for every other dependent child in the same home. Grants to States for public assistance, for the period February, 1936, when Federal funds first became available, through Dec. 31, 1939, totaled \$755,348,000. Of this amount \$646,428,000 was for old-age assistance; \$18,926,000 for aid to the blind; and \$89,994,000 for aid to dependent children.

See OLD-AGE PENSIONS; RELIEF; TAXATION.
ARTHUR J. ALTMAYER.

SOCIAL WORK, NATIONAL CONFERENCE OF. The Preamble to the Constitution states: "The National Conference of Social Work exists to facilitate discussion, to increase the efficiency of agencies and institutions devoted to this cause, and to disseminate information. It does not formulate platforms."

This is achieved mainly through the holding of an annual meeting, the attendance at which includes trained and untrained social workers, and lay people interested in social work. During the ten day period of the Conference about 300 meetings are scheduled by the Conference and its Associate and Special Groups, which are national agencies in specialized fields of social work.

The Conference serves as a center for the exchange of information about State Conferences of Social Work. An occasional bulletin is published regarding State Conferences of Social Work and two or more meetings in different sections of the country for state conference secretaries are sponsored by the Conference. The Conference is the representative of the International Conference of Social Work in the United States.

It publishes a *Proceedings* which includes the best papers given at the annual meeting. The *Proceedings* are sent to members who pay a \$5.00 or more membership fee. It also publishes a quarterly bulletin which is sent to all members.

The Conference is financed entirely by a mem-

bership of about 6000. The budget of the Conference is about \$46,000.

The officers in 1939 were: Grace L. Coyle, Cleveland, Ohio, President; Arlien Johnson, Los Angeles, Calif., 1st Vice President; Sidney Hollander, Baltimore, Md., 2nd Vice President; Mrs. DeForest Van Slyck, New York City, 3rd Vice President; Arch Mandel, New York City, Treasurer. The General Secretary of the Conference is Howard R. Knight, Columbus, Ohio. The permanent office is at 82 N. High Street, Columbus, Ohio.

SOCIAL WORKERS, THE AMERICAN ASSOCIATION OF. An organization formed in 1921 as a result of the growing recognition among the staff members of social agencies, under both public and private auspices, that social work was a specialized service and required, in consequence, specialized education and preparation.

The Association has about 11,500 members in all parts of the United States. It has 84 local or state-wide chapters. It has a National Board consisting of 21 members, which is in general charge, and a national staff is employed by that Board. A Delegate Conference, representative of the membership groups, meets as a general policy-forming body for the Association.

The Association publishes a monthly membership bulletin, *The Compass*, which may be obtained by non-members for \$1.00 a year. The revenues of the Association are almost entirely secured from membership dues, which amount to approximately \$89,000 annually, of which about \$24,000 is paid to the several chapters.

The principal officers of the national organization are: Harry Greenstein, President; Frederick I. Daniels, Treasurer; Mrs. Savilla M. Simons, Secretary; Walter West, Executive Secretary. See RELIEF.

SOCIETY ISLANDS. See OCEANIA, FRENCH ESTABLISHMENTS IN.

SOCOTRA. See ARABIA under *Aden Protectorate*.

SOILS. In recent study of soils, particular emphasis has been placed on soil surveying and mapping, erosion, conservation, and land use. See BOTANY; FERTILIZERS.

Surveying and Mapping. Surveying, mapping, and determining the crop-producing value of soils continued with unabated vigor during 1939. An outstanding development in this regard has been the perfecting and extension of aerial surveying of soil and preparing maps, especially for use of the Conservation Service, which show on a relatively large scale and at low cost buildings, fields, and physical features of farm land.

The long-established soil survey of the U.S. Department of Agriculture was continued as in previous years. Approximately 17,454 square miles of land in the United States and its dependencies was mapped by this survey during the year. The total area, 1,010,793 square miles, now covered by the detailed survey is more than one-half of the arable land of the country, furnishing a comprehensive handbook of scientific and practical information regarding the soils.

The coffee soils of Hawaii, the rubber soils of Malaya, and the prairie soils of Manitoba were subjects of special study during the year. The Malayan soils were studied and classified from the standpoint of the effect of temperature, rainfall, and humus residues, representing a somewhat neglected field of investigation with reference to tropical soils.

Erosion and Conservation. Thoroughly aroused by the alarming extent to which the soil, which is the basic resource of the country, has been and still is being dissipated, determined and far-reaching efforts are being made to curb such loss and restore the fertility of the depleted soil. It is estimated that in 300 years of American agriculture soil erosion and soil depletion have destroyed 50,000,000 acres of crop lands and dangerously injured another 50,000,000 acres, whereas in 4000 years of European agriculture the general level of soil fertility has not only been largely maintained but often increased by soil conservation methods and judicious use of manures and fertilizers.

Many and varied means are used successfully to combat soil erosion in this country, such as dams, terraces, contour furrows, strip cropping, and other now well-known methods. Recently special emphasis has been placed on the beneficial effect of incorporating organic matter in the soil and spreading of crop residues on the surface of the soil. Rational use of fertilizers is also being more generally recognized as an effective means of restoration.

A machine which builds terraces on sloping pasture lands to retard run-off of rainwater and thus prevent formation of gulleys and loss of top soil is now available for use.

An efficient method of measuring rainfall at short intervals recently devised by the Virginia Agricultural Experiment Station promises to be of great value in soil erosion studies.

A representative of the Soil Conservation Service of the Department of Agriculture has recently been engaged in a study of the history and results of soil erosion in the ancient Roman provinces of North Africa to determine if possible the part soil destruction played in the crumbling of this once great empire 6000 years ago.

Land Tenure and Use. The nature of land tenure and use has been an important factor in rural well-being in all ages and countries and has determined in large measure the trend of historic, economic, and human events. Such studies are assuming a commanding position in research relating to land use and conservation in the United States under the National Industrial Recovery Act of 1933 and the Emergency Relief Act of 1935. During the past five years, more than 9,000,000 acres of land primarily unsuited for cultivation have been bought at a total cost of about \$46,000,000, and developed largely by Federal Emergency Relief Administration and Works Progress Administration funds. The government has thus made new areas available for conservation programmes. Approximately two-thirds of the land is being held by the Federal Government and put to uses for which it is naturally best adapted. Some 956,000 acres have been added to national forests, while other areas, used chiefly for grazing, are managed by the Soil Conservation Service. Emergency funds for the purchase of this submarginal land closed on June 30, 1939, but development is being continued under the Bankhead-Jones Farm Tenant Act of 1937. New Federal purchases will be made in selected areas where the retirement of submarginal land from cultivation will aid in improving agricultural conditions and reducing the costs of local government.

Drainage. The urge to reclaim swamp lands, so strong some years ago, has recently abated to a considerable extent in favor of reserving many

such lands for wildlife refuges, recreation areas, and similar purposes.

Minor Soil Constituents. Minor or unusual constituents of soils continued to receive attention. Harmful deficiency or excess of such elements in soils appears to be widespread.

Iodine has been shown to be a necessary element for normal plant growth and health, especially for lettuce, spinach, beans, and beets, and there appears to be widespread deficiency of it in soils. Similar deficiencies and needs have also been shown for boron. Incidentally, small applications of boron have been shown to be an effective means of correcting overliming.

Selenophile Plants. A study of selenophile plants has proved to be an effective means of locating seleniferous soils, which are widespread in some of the Western States, in numerous geological formations from late Paleozoic to Quaternary.

Methods of Testing Soils. Further study of rapid chemical soil tests have indicated that such tests may not be universally applicable and may give misleading results in inexperienced hands. Further tests under a variety of conditions are therefore in progress. A wind tunnel method of classifying soil and sand particles which is said to be superior to the common sieve method has recently been proposed by the California Institute of Technology and the Soil Conservation Service of the Department of Agriculture. The method gives accurate data at low cost.

Decided advance in the use of micro-organisms in determining soil fertility deficiencies was reported during the year. Automatic records of electrical resistance of blocks of gypsum buried in the soil has recently been proposed by the Michigan Experiment Station as a means of continuous determination of soil moisture. Such records will be particularly useful in soil investigations. The wilting point of plants has been shown to be substantially constant for a given soil and plant and thus furnishes a reliable index of the water requirements of soil, as a guide in the application of irrigation water. Methods of determining the so-called wilting coefficient have been highly perfected in recent years.

Excessive Cultivation of Soils. Believing that in practice there is much unnecessary costly cultivation of the soil, a British investigator has made an exhaustive study of the subject and finds that cultivation required varies widely with type of soil and of climate and that by giving due regard to these as well as the kind of crop to be grown, much unnecessary tillage may be eliminated.

Soil Fumigants. Soil fumigants have been used with some success in destroying disease-producing organisms, insects, and weeds in soils. Use of chloropicrin has recently been proposed for this purpose. This substance is applied in holes in the soil which are afterwards sealed with soil or water. It is applied at an average rate of 5 cubic centimeters per cubic foot or 7½ pounds per thousand feet of bench space in the greenhouse.

Hydroponics. Interest in hydroponics or so-called soilless agriculture, that is growing plants in solutions, sand and such media rather than natural soil, remains unabated, particularly on the part of amateurs and commercial horticulturists, and the literature of the subject has increased rapidly. Much progress has been made in perfecting the technique of the process. Its practical

commercial value has, however, not yet been fully determined.

Saline Irrigation Waters. A regional laboratory for the study of saline irrigation waters and their effects on soils and crops was established during the year at Riverside, Calif., by the U.S. Department of Agriculture co-operating with 12 Western States and Hawaii.

See TENNESSEE VALLEY AUTHORITY.

BIBLIOGRAPHY.—Some noteworthy publications on soils appeared during the year, including among others the following books: *Behold Our Land*, by Russell Lord (Boston, Mass.); *Vanishing Lands, A World Survey of Soil Erosion*, by G. V. Jacks and R. O. Whyte (New York, N. Y.), which treats the subject not only from the agronomic standpoint but also with reference to the economic, political, and social consequences of soil erosion; *Study of the Soil in the Field*, by G. R. Clark (London); *Plant Chemistry*, by C. D. Dawson and M. V. Dorn (Los Angeles, Calif.); *Chemical Gardening for the Amateur*, by C. H. Conners and V. A. Teijdens (New York, N. Y.); *Micropedology*, by W. L. Kubiena (Ames, Iowa); *The Principles of Soil Science*, by A. A. J. de Sigmond (London); *The Plough-Up Policy and Ley Farming*, by R. G. Stapledon (London); and *Soil Conservation*, by H. H. Bennett (New York, N. Y.).

Other publications of timely interest include *Selected Annotated Bibliography on Sedimentation as Related to Soil Conservation and Flood Control*, compiled by C. B. Brown and F. F. Barnes, and *Soil Conservation and Related Subjects: A List of Publications and Conservation Charts*, both issued in mimeographed form by Soil Conservation Service, U.S. Department of Agriculture; *Prevention and Control of Gullies*, by H. G. Jepson, U. S. D. A. Farmers' Bulletin 1813; and *Putting Soil Science to Work*, by E. Truog, Journal of the American Society of Agronomy, December, 1938, p. 973.

WALTER H. BEAL.

SOLOMON ISLANDS. An archipelago in the Pacific, east of New Guinea. See NEW GUINEA, TERRITORY OF; SOLOMON ISLANDS, BRITISH.

SOLOMON ISLANDS, BRITISH. A British protectorate in the South Pacific, comprising the islands of Guadalcanal, Malaita, Ysabel, San Cristoval, New Georgia, Choiseul, Shortland, Vella Lavella, Kulambangra, Santa Cruz, Vanikoro, Rennell, and numerous smaller islands (including the Lord Howe atoll). Total land area, 11,000 square miles; population (1931 census), 94,066 including 478 Europeans. Capital, Tulagi.

Copra, trocas shell, timber, ivory nuts, green snail shell, and bêche-de-mer were the main products. In 1938, imports were valued at £232,891; exports, £292,411; revenue totaled £82,809; expenditure, £69,002. Administration is under a resident commissioner (subject to the authority and control of the high commissioner for the Western Pacific who resides at Suva, Fiji), assisted by a nominated advisory council. Resident Commissioner, W. S. Marchant (appointed Mar. 8, 1939).

History. On Apr. 30, 1939, an earthquake followed by a tidal wave caused considerable damage on the islands of Guadalcanal, Russell, and Ysabel. A number of buildings were wrecked and 12 persons were known to have been drowned.

SOMALILAND (sô-mă'lê-lând), BRITISH. A British protectorate along the Gulf of Aden in Africa. Area, 68,000 square miles; population (1938 estimate), 350,000, including 2700 non-natives. Chief towns: Berbera (capital), 30,000 (cold season) and 15,000 (hot season) inhabitants; Hargeisa, 20,000 to 15,000; Burao, 10,000; Zeilah (Zeila), 5000; Erigavo; Borama.

Production and Trade. Agricultural crops included sorghum, maize, barley, and wheat. Livestock raising is the main occupation of the people. The protectorate had (1936 estimate): 2,500,000

sheep, 2,000,000 goats, 1,500,000 camels, 30,000 cattle, 2000 donkeys, and 1000 horses. In 1938 imports were £728,050; exports, £207,548. Rice, dates, sugar, and textiles were the main imports. The chief exports were hides and skins, gum and resins, ghec, and livestock. During 1937 shipping entered and cleared totaled 110,233 and 109,843 tons, respectively.

Government. For 1938 revenue totaled £236,074; expenditure, £227,340. The protectorate is administered by a governor (with headquarters at Sheikh) who is represented by a district officer in each of the five administrative districts (Berbera, Burao, Erigavo, Hargeisa, and Zeilah). Governor and Commander-in-Chief, Vincent G. Glenday (appointed, 1939).

SOMALILAND, FRENCH. A French colony in East Africa. Area, about 8492 square miles; population (1938 estimate), 50,000 including about 1200 Europeans. Djibouti (capital) had 14,870 inhabitants in 1936. The coast fisheries, salt mines, and inland trade are the main sources of livelihood. Cotton goods, cattle, sugar, and coal are the principal imports. Salt (85,000 metric tons, 1937), coffee, hides and skins, and animal wax are the chief exports. In 1938 imports were valued at 147,700,000 francs; exports, 85,300,000 francs (franc averaged \$0.0288 in 1938). A railway connects Djibouti with Addis Ababa, capital of Italian East Africa (q.v.). Part of the shares of the French-owned railway company were transferred to the Italian Government in 1935. On July 1, 1939, passenger and freight rates were drastically reduced and at the request of the Italian Government the railway was equipped to transport 1000 tons daily in each direction instead of the previous 250 tons. See FRANCE and ITALY under History.

Public revenue in 1938 was estimated at 47,148,400 francs; ordinary expenditure, 24,248,400 francs; extraordinary expenditure, 22,900,000 francs. A governor, assisted by an administrative council, administers the colony. Governor, M. Annet (appointed December, 1935).

SOMALILAND, ITALIAN. See ITALIAN EAST AFRICA.

SOUTH AFRICA, UNION OF. A self-governing dominion of the British Commonwealth of Nations. Capital, Pretoria; seat of the legislature, Capetown.

Area and Population. The area by provinces and the mean population by provinces and racial composition as officially estimated for June 30, 1939, are shown in the accompanying table.

SOUTH AFRICA: AREA AND POPULATION
[Estimated, June 30, 1939]

Province	Area, sq. miles	Europeans	Bantus	Asiatics & mixed
Cape of Good Hope..	277,169*	818,700	2,130,400	734,900
Natal	35,284	199,200	1,640,800	212,200
Transvaal	110,450	897,600	2,645,400	81,200
Orange Free State . . .	49,647	201,000	580,900	17,700
Total	472,550	2,166,500	6,997,500	1,046,000

* Including Walvis Bay (430 sq. miles)

The census population of May 5, 1936, totaled 9,589,898 (European, 2,003,857; non-European, 7,586,041), as compared with a total estimated population of 10,160,000 (European, 2,116,500; non-European, 8,043,500) on June 30, 1939. European births registered in 1938 numbered 52,264 (25.11 per 1000); deaths, 19,521 (9.38 per 1000).

During 1938 101,276 Europeans arrived in South Africa, including 7435 intending permanent residence, and 92,190 departed. Populations of the chief cities, including suburbs, at the 1936 census were, with the number of Europeans in parentheses: Johannesburg, 519,384 (257,671); Capetown, 344,233 (173,412); Durban, 259,606 (95,033); Pretoria, 128,621 (76,935); Port Elizabeth, 109,841 (53,461); Germiston, 79,440 (32,564); East London, 60,563 (31,311); Bloemfontein, 64,233 (30,291). The same census showed that the home language of 1,120,770 persons (55.93 per cent of the European population) was Afrikaans, 783,071 (39.08 per cent) English, 50,411 (2.52 per cent) English and Afrikaans, 17,810 German, and 17,684 Yiddish.

National Defense. By the Defense Act of 1922 citizens of European descent between the ages of 17 and 60 are liable to war service, and those between 17 and 25 are liable to peace-time training, spread over a period of four years. The Permanent Force in 1938 consisted of 234 officers and 4499 of other ranks, including the air force of 119 officers and 1514 men. A total of 944 officers and 13,687 of other ranks were called for peace-time training in the year 1938-39. Members of defense rifle associations numbered 113,590 on Mar. 31, 1938.

Education and Religion. In 1937 there were 4471 state and state-aided schools for Europeans with 381,550 pupils, and 4850 schools for non-Europeans with 546,225 pupils. Total normal state expenditures on these schools for the year was £9,354,422 (South African). There are four universities at Capetown, Stellenbosch, Witwatersrand, and Pretoria; the latter has five branches. In 1937 the average number of university students was 8707 and the state expenditure £364,871. At the 1926 census the percentage distribution of European church adherents was: Dutch churches, 49.61; Anglicans, 18.57; Methodists, 6.28; Hebrews, 4.28; Roman Catholics, 4.25.

Production. Agriculture, stock-raising, mining, and manufacturing are the chief occupations. Livestock on Aug. 31, 1938, included 11,371,733 cattle, 32,795,580 woolled sheep, 6,205,901 non-wooled sheep, 631,596 Angora, and 5,493,596 other goats. Wool production in the year ended Aug. 31, 1938, was 207,904,000 lb.; mohair, 3,234,000 lb.; creamery butter, 30,024,000 lb.; factory cheese, 12,184,000 lb. Estimated production of the chief crops was (in metric tons): Wheat, 465,200 in 1938-39; barley, 25,200 in 1937-38; rye, 18,400 in 1937-38; oats, 84,800 in 1937-38; corn, 2,575,900 in 1938-39; potatoes, 200,300 in 1937-38; cane sugar, 472,600 in 1938-39; tobacco, 10,800 in 1937-38. The Union normally exports 5,000,000 cases of citrus fruit. Wine production (1937-38) was 1,411,000 hectoliters (one hectoliter equals 26.42 U.S. gal.).

The quantity and value of the chief minerals produced in 1938 was: Gold, 12,161,392 fine oz. (£61,658,311); coal, 17,536,230 tons (£4,729,423); diamonds, 1,238,608 metric carats (£3,496,243); lime and limestone, 2,157,573 tons (£802,663); manganese ore, 422,757 tons (£560,602); copper, 14,683 tons (£464,466); asbestos, 22,282 tons (£424,078); chrome ore, 128,899 tons (£239,888); platinum, 38,862 oz. (£223,776). The total value of 1937 mineral production was £94,291,502 (£88,516,790 in 1936). In 1936-37 there were 9987 manufacturing establishments, with 140,203 European and 192,565 other employees; salaries and wages paid totaled £41,531,000 and the total value of output

was £175,765,000 of which £85,931,000 was added in process of manufacture.

Foreign Trade. General imports in the calendar year 1938 totaled 95,886,917 South African pounds (£103,383,626 in 1937); general exports, £103,899,105 (£125,415,610). Minerals accounted for 75.17 per cent of the value of all 1938 exports; agricultural and pastoral products, 18.82 per cent. The value of gold bullion exported in 1938 was £68,710,157, of which £20,714,902 was earmarked. Of the 1938 imports, £41,458,938 came from the United Kingdom, £9,662,555 from other parts of the British Commonwealth, and £44,737,233 from other countries. Of the exports £84,199,855 went to the United Kingdom, £6,283,639 to other parts of the British Commonwealth, and £13,609,235 to other countries. Total imports in 1939 were £91,046,115; exports (excluding gold shipments), £33,751,456.

Finance. The budget for the year ended Mar. 31, 1939, closed with a surplus of £1,879,254. Revenues totaled £44,087,244 and expenditures £42,207,990, as compared with £43,730,000 and £39,536,092, respectively, in 1937-38. Budget estimates for 1939-40 placed revenues at £44,442,014 and expenditures at £44,110,000. The gross public debt on Mar. 31, 1939, was £278,876,359 (internal, £177,753,151; external, £101,123,208), against £262,617,905 on Mar. 31, 1938. The average exchange rate of the South African pound was \$4.8962 in 1937, \$4.8416 in 1938, \$4.4017 in 1939.

Transportation. Railway mileage in the Union and in South-West Africa on Mar. 31, 1938, totaled 13,620 (government, 13,213; private, 407). For the year ended Mar. 31, 1939, the Minister of Railways and Harbors estimated revenues at £38,240,437 and expenditures at £39,889,025. The highway mileage in 1939 was 88,949. A six-year program calling for the construction of 5400 miles of national roads at a cost of some £20,000,000 was started in 1936. Up to Dec. 31, 1938, 1227 miles of these highways were constructed. The sum of £4,500,000 was appropriated for continuation of this program during 1939-40. The South African cities are linked with Egypt, Europe, and London by Imperial Airways. The South African Airways, operating six services, carried 34,162 passengers and 3,005,639 lb. of freight and mails in 1938. During 1938 6182 vessels of 24,869,085 net registered tons entered at Union harbors.

Government. Executive power is exercised by the Governor-General, appointed by the King on recommendation of the South African Government, and by the Executive Council (cabinet), which is responsible to Parliament. Parliament consists of a Senate of 44 members (8 appointed by the Governor-General and 36 elected) and a House of Assembly of 153 members, elected by white male and female suffrage for five years unless sooner dissolved. Governor-General in 1939, Sir Patrick Duncan (assumed office March, 1937). Prime Minister and Minister of External Affairs at the beginning of 1939, Gen. J. B. M. Hertzog, heading a United South African National party cabinet with former Premier Jan Christiaan Smuts as Deputy Prime Minister and Minister of Justice. For changes in 1939, see *History*.

HISTORY

Colonial Issues. During the first half of 1939 evidence of German designs upon South-West Africa and effective Nazi propaganda and penetration in the Union of South Africa itself appeared to have united the Afrikaner and British

elements within the Union Government in support of Britain's "stop-Hitler" policies. In April the government adopted forceful measures to check German military and propagandist activities in South-West Africa aiming at the return of that mandated territory to the Reich (see *SOUTH-WEST AFRICA* under *History* for details).

Shortly afterwards Defense Minister Oswald Pirow made a six weeks' trip to London, Berlin, Rome, Brussels, The Hague, and Lisbon in unsuccessful search of an agreement whereby Belgian and Portuguese territories in West Africa would be transferred to Germany in return for Hitler's renunciation of his claim to South-West Africa and Tanganyika. Upon his return to South Africa late in June Pirow declared the transfer of South-West Africa and Tanganyika to Germany to be "quite impossible," but urged that fair compensation for these territories be arranged by negotiation. In mid-August President Carmona of Portugal, after inspecting the defenses of Mozambique, paid a state visit to Pretoria and Capetown. He apparently reached some arrangement with the Hertzog Government for mutual military collaboration in defense of their common interests in Africa (see *PORTUGAL* under *History*).

Hertzog's Resignation. Despite these evidences of an identity of South Africa's interests with those of Britain and her allies, Britain's declaration of war upon Germany on September 3 produced a wide split in the Hertzog Cabinet. On September 5 Prime Minister Hertzog carried the issue to the House of Assembly by introducing a resolution for a modified form of neutrality. He urged that the Union's relations with all European belligerents continue unchanged but that existing contractual relations between the Union, Great Britain, and the other British Dominions, including the agreement for British use of the Simonstown naval base, be observed. His policy was supported by the opposition Nationalist leader, Dr. D. F. Malan, who had stated a few days before that the Nationalists had good reason to believe that if South Africa remained neutral it would be given South-West Africa in a peaceful manner.

General Smuts vigorously opposed the resolution, declaring that South-West Africa would be taken by Germany at the bayonet's point if Britain was defeated. His amendment to the Prime Minister's resolution, calling for co-operation with the British Empire without conscription or sending troops overseas, was approved by the House of Assembly, 80 to 67. Prime Minister Hertzog then requested the Governor-General to dissolve Parliament and call a general election. When the Governor-General refused, the Prime Minister resigned, along with other Cabinet Ministers supporting his policy—Oswald Pirow, Gen. J. C. Kemp (Lands), N. C. Havenga (Finance), and Senator A. P. J. Fourie (Railways and Harbors).

Smuts Forms Government. At the Governor-General's request, General Smuts then formed a new ministry, including Col. C. F. Stallard, leader of the pro-British Dominion party, Walter Madeley, leader of the Labor party, and six holdovers from the Hertzog Cabinet. The new Cabinet lineup, announced September 7, was: Prime Minister, Defense and External Affairs, General Smuts; Native Affairs, Col. Denys Reitz; Agriculture and Forestry, Col. W. R. Collins; Finance and Education, J. H. Hofmeyr; Interior and Public Health, H. G. Lawrence; Railways and Harbors, F. C. Sturrock; Posts, Telegraphs, and Public Works, C. F. Clarkson; Labor, W. B. Madeley;

Lands, Senator A. M. Conroy; Justice, Dr. Colin Steyn; Mines, Col. C. F. Stallard; Minister without Portfolio, Major P. V. G. van der Byl. This National Government held 85 seats in the House of Assembly (General Smuts, 69; Dominion party, 9; Labor, 4; native representatives, 3) against 39 held by Hertzog supporters and 29 by the Malanites.

The National Government's war policy was upheld early in November by the Central Head Committee of the United South African National party, 28 to 18; in several by-elections; and in the Senatorial elections of November 17. In the new Senate the Smuts Government held 28 seats against 10 for the Hertzog group and 6 for the Malanites. These developments led General Hertzog and his supporters to withdraw from the United South African National party and to join forces with the extreme Nationalists under Dr. Malan. A related development was the secession of the Mine Workers' Union from the Trades and Labor Council on November 22—one of several steps made to establish an independent Afrikaans-speaking labor movement. But events of the year tended to consolidate the majority support enjoyed by the government.

War Contribution. After declaring war on Germany on September 6, the Smuts Government issued a series of emergency decrees under which the Union was governed through the remainder of the year. Energetic steps were taken to crush an extensive sabotage and propaganda ring organized by the German Minister and other Nazi agents in South Africa and South-West Africa. Economic and financial aid was extended to Britain. The South African gold production was an important bulwark of British war finance. An aerial patrol of coastal waters was established to aid the British navy in tracking down German sea raiders. The government discouraged the enlistment of its citizens for overseas service, but promised to defend any British territories in Africa that appealed for help in the war. This assured Kenya and Tanganyika of aid in the event of an Italian attack delivered from Ethiopia. Colonel Reitz was sent to London in November to confer with British and other Dominion representatives on methods of closer co-operation.

The British Government late in October agreed to buy the great bulk of the Union's surplus agricultural commodities, including the entire surplus of corn and dairy products. On December 8 Britain undertook to purchase most of the wool clip at a favorable price. There was also a strong British demand for South African minerals and other raw materials. The government mobilized the country's resources to aid Britain's prosecution of the war through a Director General of War Supplies, assisted by a group of experts. There were various private contributions to the Empire's cause. In September the Johannesburg City Council sponsored a campaign for £1,000,000 to acquire local surpluses of butter, eggs, sugar and other foodstuffs for free distribution to Britain and France. In October a £250,000 fund was raised with government approval to combat German propaganda in South Africa.

Defense Measures. The Smuts Government also took energetic measures to strengthen the Union's defenses and to deal with possible domestic disturbances. The Union Defense Force was reorganized. All members were required to take the oath of allegiance to the Crown. A number of high military and police officers were re-

called from retirement. The Civil Guard was reformed to relieve soldiers and police from routine duties. A new Highland regiment and a South African Irish Brigade were created and a local Seaward Defense Corps organized. Members of the famous Boer commandos to the number of 118,000 were sworn in for home defense service. In the first month of war, 70,000 citizens signed the voluntary national register, and more than 20,000 enlisted for women's auxiliary services. There was rapid progress in training air pilots and technicians. The government's plan called for creation of a mobile striking force of 50,000, an auxiliary corps of 35,000 to 45,000 riflemen and scouts, and squadrons of bombing and fighter planes.

Economic Decrees. The government also took steps to protect the economic system from dislocations due to the war. Control of all transactions in gold and foreign exchange was decreed September 9 and sale of all gold and foreign currency to the Treasury was required within 30 days. A price control scheme was placed in effect with regard to essential commodities. On September 14 decrees were issued prohibiting hoarding and profiteering under heavy penalties. It was announced that the government would keep the South African pound linked to sterling and buy all domestically produced gold at a price not exceeding 150 shillings per ounce.

See CANADA and GREAT BRITAIN under *History*; CHEMISTRY, INDUSTRIAL; MILITARY PROGRESS.

SOUTH AMERICA. A continent comprising 10 republics (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, and Venezuela) and three colonies (British Guiana, French Guiana, and Surinam). Total area, about 45,645,300 square miles; population, 91,300,000 (Dec. 31, 1938 estimate). See EXPLORATION; PAN AMERICANISM; PAN AMERICAN UNION; and separate articles on each country and colony.

SOUTH AUSTRALIA. An Australian State. Area, 380,070 square miles; population, exclusive of full-blood aboriginals, 595,376 (Mar. 31, 1939, estimate), compared with 580,949 (1933 census). During 1938 there were 9410 births (15.88 per 1000); 5539 deaths (9.35 per 1000); 5489 marriages (9.26 per 1000). The principal cities are Adelaide (capital), with 321,410 inhabitants, including suburbs, on Dec. 31, 1938; Port Pirie, 11,677 (1933); Mount Gambier, 5542 (1933). In 1937 the 1090 State schools had 86,807 pupils; the 193 private schools, 17,381; there is a State university at Adelaide.

Production. Wheat (31,737,411 bu. in 1938-39 season), barley, oats, hay, grapes, wine, and dried fruit are the main agricultural products. Live-stock (June 1, 1939): 318,897 cattle; 195,834 horses; 71,292 swine; 9,936,586 sheep. The principal dairy products for 1937-38 were butter, 22,428,298 lb.; cheese, 15,516,879 lb.; bacon and ham, 6,196,378 lb. Wool (greasy) produced during 1939 totaled 97,000,000 lb.

The estimated value of mineral production for 1938 was £A2,932,473. In 1937-38, from the 1980 factories, with 44,084 employees, the net value of production was £A13,820,155 (Australian £ averaged \$3.9394 for 1937 and \$3.8955 for 1938).

Government. For the year ended June 30, 1939, revenue totaled £A12,298,000; expenditure, £A12,700,000; public debt, £A108,887,000. Executive power is vested in a governor, assisted by an executive council of responsible ministers. Legis-

lative power is vested in a parliament consisting of a legislative council of 20 members (10 re-elected every 3 years) and a house of assembly elected for 3 years. The house of assembly (election of Mar. 19, 1938) comprises the following parties: Liberals, 15; Labor, 9; Independent Labor, 2; Independents, 13. Governor, Sir Malcolm Barclay-Harvey (assumed office July, 1939); Premier, Thomas Playford. See AUSTRALIA.

SOUTH CAROLINA. Area and Population. Area, 30,989 square miles; included (1930) water, 494 square miles. Population: Apr. 1, 1930 (census), 1,738,765; July 1, 1937 (Federal estimate), 1,875,000; 1920 (census), 1,683,724. Charleston had (1930) 62,265 inhabitants; Columbia, the capital, 51,581.

Agriculture. South Carolina harvested, in 1939, 5,086,000 acres of principal crops; of this total, about three-fifths was in corn and in cotton. Cotton, on 1,218,000 acres, gave 870,000 bales (estimated farm value, \$40,455,000); corn, on 1,754,000 acres, 25,433,000 bu. (\$16,786,000); tobacco, on 140,000 acres, 130,200,000 lb. (\$19,009,000); tame hay, 655,000 acres, 541,000 tons (\$7,520,000); oats, 490,000 acres, 11,515,000 bu. (\$4,376,000); sweet potatoes, 67,000 acres, 6,834,000 bu. (\$4,442,000); potatoes, 28,000 acres, 3,108,000 bu. (\$2,362,000); wheat, 210,000 acres, 2,415,000 bu. (\$2,077,000).

Manufacturing. The U.S. Census of Manufactures reported, in 1939, the totals covering 1937 for South Carolina, as follows (figures for 1935 in parenthesis): Active manufacturing establishments, 1193 (1121); wage-earners there employed, 129,748 (108,558); wages paid, \$91,791,692 (\$65,946,031); factories' output, \$409,911,517 (\$297,156,408); part of this value contributed by processes of manufacture, \$175,478,152 (\$112,538,207). The weaving, dyeing, and finishing of cotton fabrics contributed the chief part of 1937's output of manufactures. Cotton goods were woven to the total of \$216,800,565; in this work 74,693 wage-earners received \$55,056,405. Related to this weaving, but done in separate establishments and separately listed in the total output of manufactures, was a production of cotton yarn and thread totaling \$19,744,146. The output of dyers and finishers of fabrics of cotton attained \$24,418,067. Woven goods were made of rayon also; their total value for 1937 was \$25,125,646. The production of hosiery (materials not specified) amounted to \$1,685,030.

Outside of textiles, the manufacture of lumber and timber products amounted to \$17,066,532; the output of planing mills, to \$3,402,641 additional; and establishments treating cottonseed produced \$11,106,050 in oil, cake, and meal.

Greenville, the chief manufacturing city, produced \$22,649,659 in manufactured goods, while Greenville County's much greater total was \$64,508,794.

Education. For the academic year 1938-39 the number of South Carolina's inhabitants of school age (from 6 years to 20, inclusive) was stated as 677,587. Of the 487,610 reported enrollments in the public schools for that year, those of pupils in the elementary studies comprised 200,166 whites and 205,698 Negroes; in high schools, 66,716 whites and 15,030 Negroes. The year's expenditures for public-school education totaled, for whites, \$15,952,094; for Negroes, \$2,502,437. The teaching force, 9577 whites and 5506 Negroes, averaged respectively, in pay for the year, \$975 and \$383.

Legislation. The regular annual session of the Legislative Assembly dealt with a State budget providing about \$10,267,000 for the State's expenses of the forthcoming year and with a supplementary appropriation of some \$700,000 applying to a deficiency in the means to cover the expenses for the remainder of the current fiscal year. A constitutional amendment for abolishing the three-mill Statewide tax on property, levied for the support of schools, was passed by both houses.

Maybank, the incoming Governor, who considered himself specially pledged to give the State a satisfactory enforcement of law and order, sought from the session a measure creating a State police. Foiled by an adverse vote of the lower legislative house, he declared himself left without adequate means of making his promise good. Among legislative investigations conducted, one dealt with the State's finances; another, with the abnormally numerous pardons and paroles issued in the last part of the official term of Governor Johnston.

Political and Other Events. Burnet Rhett Maybank was inaugurated Governor on January 17. South Carolina's statute limiting the hours of employment to 12 a day and to 56 a week in factories and mercantile houses was declared unconstitutional by the State Supreme Court; the Court's opinion found the statute at fault in failing to restrict the limitation to those workers generally recognized as subject to such regulation and in failing to establish any basis of health-protection for the limit to working hours.

South Carolina made noteworthy improvement in economic prosperity during 1939; the volume of retail sales in the State, a measure of individuals' purchasing power, rose, for September, to 14.4 per cent above that for September, 1938. The rate of this excess was the highest shown for September in any State except Florida. The monthly rate of payments for all kinds of public assistance rendered in the State was \$3,181,000 in June; of this total, the wages paid under Federal programs of work contributed about \$2,850,000, or nine-tenths; general poor-relief during June cost the State and its subdivisions only \$28,000. People receiving old-age assistance in June numbered 24,985; those on the payroll of the WPA, 38,771.

Officers. South Carolina's chief officers, serving in 1939, were: Governor, Burnet R. Maybank (Dem.); Lieutenant-Governor, J. E. Harley; Secretary of State, W. P. Blackwell; Treasurer, E. P. Miller; Attorney-General, John M. Daniel; Comptroller, A. J. Beattie; Superintendent of Education, James H. Hope.

SOUTH CAROLINA, UNIVERSITY OF. A nonsectarian, coeducational, State institution of higher education in Columbia, chartered in 1801. Enrollment for the autumn session of 1939 totaled 1944; in the summer session, 699. The faculty numbered 106. The State appropriation amounted to \$299,525 from July 1, 1939, to July 1, 1940. The library contained 135,000 volumes. A new woman's dormitory and a new men's dormitory, constructed at a cost of \$300,000 each, were opened. President, J. Rion McKissick, A.M., LL.D.

SOUTH DAKOTA. Area and Population. Area, 77,615 square miles; included (1930) water, 747 square miles. Population: Apr. 1, 1930 (census), 692,849; July 1, 1937 (Federal estimate), 692,000; 1920 (census), 636,547. Sioux Falls

(1930) had 33,362 inhabitants; Pierre, the capital, 3659.

Agriculture. South Dakota's farmers harvested, in 1939, 12,478,000 acres of the principal crops; this total was about 6 per cent below the average for the decade 1928-37. Corn, on 2,677,000 acres, made 46,848,000 bu. (estimated value on the farm, \$25,298,000); wheat, on 2,245,000 acres, 19,424,000 bu. (\$13,208,000); barley, 1,449,000 acres, 24,633,000 bu. (\$8,622,000); oats, 1,627,000 acres, 43,929,000 bu. (\$10,982,000); tame hay, 775,000 acres, 719,000 tons (\$3,379,000); rye, 528,000 acres, 4,752,000 bu. (\$1,568,000); potatoes, 30,000 acres, 2,400,000 bu. (\$1,320,000).

Manufacturing. The U.S. Census of Manufactures published in 1939 a report on South Dakota showing the following totals for the manufacturing activity of 1937 (totals for 1935 are subjoined in parenthesis): Active manufacturing establishments numbered 434 (403), employed 4970 wage-earners (4400), paid them \$5,484,671 (\$4,397,847), and produced in goods \$67,276,395 (\$56,025,617), to which their processes of manufacture contributed \$14,379,587 (\$11,303,684).

Manufacture, for the most part, consisted of the relatively simple preparation of goods from the farm; hence the value added by manufacture was less, in proportion to the value of the whole output, than where the prevailing type of industry called for fabrication on an elaborate scale. Meat-packing, the chief industry, employed, in 1937, 1802 wage-earners, paid them \$2,282,011, attained \$39,025,348 in output, and to this sum contributed \$4,306,057 by manufacture; it accounted for three-fifths of all manufactured output, less than one-third of all value added by manufacture, and over two-fifths of all manufacturing wages. Butter-making establishments' production amounted to \$11,197,503, which included \$1,454,665 added by manufacture; packers and dressers of poultry produced \$1,662,824, to which total their own processes contributed \$258,804. Among the few lines of more intensive manufacture, the production of newspapers and periodicals held first place; products totaled \$2,390,923, of which \$1,852,033 was added by manufacture. Bakeries produced \$4,042,637.

Mineral Production. South Dakota's great gold-mining industry made a new increase in its yearly production, which rose to about 608,000 ounces for 1939, from 594,847 (1938), or by value to \$21,280,000, from \$20,819,645. The Homestake Mine produced about nine-tenths of the gold mined in 1938 and no change in this predominance was reported for 1939. Gold, in its turn accounted for nearly six-sevenths of all the State's yearly production of minerals (\$23,472,873 for 1937). The Homestake Mine was sinking a shaft to the 5000-foot level in 1939.

Education. South Dakota's inhabitants of school age were stated for the academic year 1938-39 as 138,518 aged from 6 years to 17 and 50,306 from 17 to 21. The year's enrollments of pupils in all public schools numbered 139,013; this comprised 101,050 in elementary study and 37,963 in high schools. Other enrollment included 6955 elementary pupils and 1335 in high schools, altogether 8290, in the parochial schools. The year's expenditures for public-school education totaled \$12,163,599, capital outlay included. The 8107 teachers in public schools received, for the year, pay averaging \$663.60 in elementary positions and \$1097.42 in high schools.

Legislation. The regular biennial legislative

session, meeting in January, restored punishment by death for those convicted of murder, this penalty having been abolished in 1915. A tax was imposed on goods bought outside the State and brought in for use; the purpose of the new tax was to discourage purchasers from going over the State's border and escaping the South Dakota sales tax.

Political and Other Events. Gov. Harlan J. Bushfield, who took office in January, renewed the effort to bring the State safely out of the financial uncertainties in which its system of State grants of credit to rural borrowers had put it some two decades before. Bushfield, as chairman of the Rural-Credit Board discussed the subject with that body, and in August an arrangement was announced, by which a leading firm of bankers was to act as the State's agent to effect the refunding, at the holders' will, of the greater part of the State's debt incurred for the rural credits that it had granted. This debt then stood at \$36,-869,000, of which about \$10,000,000 would mature in the next two years; the Bushfield administration's plan was to lengthen the period for total repayment to 20 years and to spread repayment out evenly so far as possible, by substituting serial bonds to mature yearly from 1950 to 1959, inclusive. An initial offering, by bankers, of \$2,-200,000 was ready at the end of 1939.

Officers. South Dakota's chief officers, serving in 1939, were: Governor, Harlan J. Bushfield (Rep.); Lieutenant-Governor, Donald C. McMurchie; Secretary of State, Olive A. Ringsrud; Treasurer, W. G. Douglas; Auditor, W. W. Warner; Attorney-General, Leo A. Tenney; Superintendent of Public Instruction, J. F. Hines.

SOUTH DAKOTA, UNIVERSITY OF. A State institution of higher education at Vermilion, founded in 1882. The enrollment for the autumn term of 1939 was 1032 and for the summer session 407. The faculty and staff numbered 100. The operating income for the year 1938-39 was \$360,245. There were 102,000 volumes in the library, and an addition to it was under construction. President, I. D. Weeks, LL.D.

SOUTH DAKOTA STATE COLLEGE OF AGRICULTURE AND MECHANIC ARTS. A State college of agriculture and mechanic arts at Brookings, founded in 1881. The enrollment for the autumn of 1939 was 1299 collegiate students, 176 vocational school of agriculture students, and 60 students in the two-year vocational course in aviation mechanics. The 1939 summer school had an attendance of 183. On the teaching staff were the equivalent of 105 full-time teachers and officers of general administration in the collegiate departments and 10 in the secondary vocational courses. The income for 1937-38 was \$552,021. The library contained approximately 64,602 volumes (June 30, 1939), 22,500 pamphlets, and 523 periodical subscriptions. Three new buildings were under construction during 1939. President, Charles W. Pugsley, D.Agr.

SOUTHERN CALIFORNIA, UNIVERSITY OF. An institution of higher education for men and women in Los Angeles, Calif., founded in 1879. The enrollment for 1938-39, including summer session and extension classes, was 16,924. In the autumn of 1939 there were 636 members on the faculty. The endowment was \$1,600,000; the income from tuition and fees, \$1,996,390; and other income, \$176,203. The library contained 256,222 volumes. Three new buildings, College of Engineering, College of Architecture and Gallery

of Fine Arts, and Hancock Foundation Building for Biological Research, were added during the year. President, Rufus B. von Klein Smid, Sc.D.

SOUTHERN RHODESIA. See RHODESIA, SOUTHERN.

SOUTH GEORGIA; SOUTH ORKNEYS. See FALKLAND ISLANDS.

SOUTH MANCHURIA RAILWAY CO. See MANCHOUKUO under *Communications*.

SOUTH OSSETIAN AUTONOMOUS REGION. See GEORGIAN SOVIET SOCIALIST REPUBLIC.

SOUTH-WEST AFRICA. A territory administered as a part of the Union of South Africa (q.v.) under a mandate approved by the League of Nations. Total area, 317,725 square miles; population (1938 estimate), 365,000. The census of 1936 showed (exclusive of Walvis Bay) 357,-787, including 261,724 natives and 30,677 Europeans (of whom 9632 were German-speaking and of these 6244 were British or South African subjects). Chief towns: Windhoek, the capital, 10,651 inhabitants in 1936; Luderitz, 2560; Keetmanshoop, 2716; Swakopmund, 1976; Walvis Bay. In 1937 there were 10,640 pupils enrolled in the 169 primary and secondary schools.

Production and Trade. Agriculture is not carried on in a large way because of the low rainfall. Livestock in the territory (1938): 908,-071 cattle; 28,164 horses; included 9690 pigs; 3,074,257 sheep, and 1,420,322 goats. Mining is an important industry. Output of diamonds and gold (1938): 154,856 carats and 1959 standard oz., respectively. Other mineral production (1937) in metric tons: Iron ore, 7000; copper ore, 11,800; lead ore, 10,300; tin, 200; tungsten ore, 24; vanadium, 585. Karakul skins exported (1938) aggregated 1,250,000 pelts. General imports, 1938 (in old U.S. gold dollars) totaled \$5,900,000; exports, \$9,100,000.

Communications. In 1937 there were 1891 miles of railways and 902 miles of motor services. During 1937, 252 vessels entered the ports and 80,947 tons of cargo were landed and 59,270 tons were shipped. The public roads extended more than 20,000 miles.

Government. For the year ended Mar. 31, 1939, public revenue totaled £685,700; expenditure, £702,083. Revenue for 1939-40 is estimated at £660,000; expenditure at £721,382. South-West Africa is regarded as part of the Union of South Africa for the purposes of customs and excise levies and a sum approximating the duties paid on goods in the territory is allotted to the administrative cost of South-West Africa. The mandate is vested in an administrator appointed by the Union of South Africa government who is assisted by an executive committee of 5 members, an advisory council of 8 members, and a legislative assembly of 12 elected members and 6 appointed members, the latter nominated by the administrator and approved by the governor-general. Administrator, Dr. D. G. Conradie (re-appointed, Apr. 1, 1938).

History. Following reports of German-inspired plans for a revolt in South-West Africa, police reinforcements were drafted from the Union of South Africa and the South-West African and Union police forces were merged in 1939. Co-incidentally, Great Britain began installation of 9.2-inch guns overlooking Walvis Bay which, though geographically situated in South-West Africa, is politically a part of Cape Province and could therefore be fortified without violating the

terms of the mandate. Repressive measures against Nazi agitation were taken by police after the outbreak of the war in Europe and up to the close of the year no serious troubles had occurred. Early in 1939 the Deutsche Bund at a conference at Windhoek endorsed Germany's colonial claims and demanded a special mandate citizenship by which Germans could participate in elections and still profess allegiance to their fatherland.

Administration of the eastern portion of the Caprivi Finger—a narrow stretch of South-West Africa between Bechuanaland and Northern Rhodesia and Angola—was taken over by the Union of South Africa in 1939 with the announcement that because of the geographical position of the strip it was considered expedient that the Minister of Native Affairs should administer it.

SOVIET CENTRAL ASIA. A region in central Asia embracing Tajik S.S.R., Turkmenistan S.S.R., Uzbek S.S.R., and Kirghiz S.S.R. See UNION OF SOVIET SOCIALIST REPUBLICS as well as the several constituent republics under separate headings.

SOVIET UNION. See UNION OF SOVIET SOCIALIST REPUBLICS.

SOYBEANS. Production of soybeans for beans in the United States in 1939 was estimated at 87,409,000 bu., 39 per cent above the 62,729,000 bu. of 1938, and compared with the 1928-37 average of 21,833,000 bu. New high records were established in 1939 for total acreage with 10,006,000 acres and acreage harvested for beans 4,226,000 acres, versus 8,196,000 and 3,105,000 acres, respectively in 1938. Average acre yields were 20.7 bu. in 1939 and 20.2 bu. in 1938. Soybean production has been increasing rapidly for some years and the beans are being used largely in crushing, partially in substitution for cottonseed. States leading in yields of soybeans for beans were Illinois 45-423,000 bu., Indiana 13,962,000, Iowa 10,227,000, Ohio 9,681,000, and North Carolina 2,012,000 bu. The season average price per bushel received by farmers was 77.2¢ in 1939 and the value of production was estimated at \$67,488,000 versus 67.6¢ and \$42,389,000 in 1938. Soybean hay production rose to 6,263,000 tons from 4,423,000 acres in 1939 from 5,335,000 tons from 3,788,000 acres in 1938. The area of soybeans grazed or plowed under in 1939 totaled 1,357,000 acres. See MANCHOUKUO under *Production*.

HENRY M. STEECE.

SPAIN. A state of southwestern Europe. Capital, Madrid.

Area and Population. Area, 196,607 square miles, including the Balearic and Canary Islands (q.v.). Estimated population (May, 1939), 25,365,000. Populations of the chief towns (1934) were: Barcelona, 1,148,129; Madrid, 1,048,072; Valencia, 352,802; Seville, 238,727; Málaga, 203,844; Saragossa, 189,062; Bilbao, 175,898.

Colonial Empire. The Spanish colonial empire consists of Spanish Morocco (see MOROCCO) and Spanish West Africa (q.v.), with a total area of about 133,500 square miles and population estimated at 895,000.

Education and Religion. The 1930 census showed 45 per cent of the adult population unable to read or write. The Roman Catholic Church, to which the great majority of Spaniards adhere, was re-established as the official religion throughout Spain at the end of the civil war in 1939 (see *History*).

Production. Agriculture, mining, manufacturing, and fishing are the main occupations. The principal products were (in metric tons): Wheat, 3,306,500 (1936); barley, 1,709,600 (1936); rye, 458,600 (1936); oats, 552,600 (1936); corn, 735,500 (1935); rough rice, 292,000 (1935-36); potatoes, 5,064,000 (1935); beet sugar, 135,000 (1938-39); wine, 1,446,000 hectoliters of 26.42 U.S. gal. (1937); wool and mohair, 27,200 (1937); rayon, 500 (1938); iron ore, 1,180,000 (1938); pig iron and ferro-alloys, 450,000 (1938); steel ingots and castings, 470,000 (1938); copper (smelter), 12,000 (1938); lead (smelter), 30,000 (1938); zinc (smelter), 7700 (1938); quicksilver, 1450 (1936-37); silver, 45 (1935); pyrites, 2,300,000 (1937). Cotton textiles, paper, glass, and numerous other manufactures were produced previous to the civil war.

Foreign Trade. Merchandise imports in 1937 totaled 344,259,000 gold pesetas (505,703,000 in 1936); exports, 192,745,000 (453,803,000). Foodstuffs and manufactured goods were the chief imports and foodstuffs the main exports. Trade in 1939 was conducted largely on a barter basis (see *History*). See IMPORTS AND EXPORTS.

Finance. Budget estimates for 1936 were: Revenue, 4,421,000,000 pesetas; expenditure, 4,569,000,000. The finances were rendered chaotic by the civil war (1936-39). The gold reserve (2,225,000,000 pesetas on Dec. 31, 1935) was largely dissipated. The internal debt (19,012,300,000 pesetas on Jan. 1, 1937) was increased by issues of paper currency in large but undisclosed amounts. During the war the Franco Government contracted heavy obligations in Italy and Germany. A Madrid dispatch of Sept. 14, 1939, placed the total debt recognized by the Franco Government at \$2,500,000,000. The average exchange value of the peseta was \$0.0560 in 1938, \$0.0999 in 1939.

Communications. Spain in 1939 had about 10,340 miles of railway line, about 70,760 miles of roads, and air lines connecting the chief Spanish and European cities. Reconstruction of the railways and highways damaged in the civil war was begun (see *History*). The net tonnage of overseas shipping entering the ports in 1935 was 32,106,000.

Government. For the republican Constitution of Dec. 9, 1931, and subsequent constitutional developments, see 1938 YEAR BOOK, p. 687. At the beginning of 1939 the Loyalist and Nationalist (Insurgent) territories were administered by two rival governments at Barcelona and Burgos, respectively. For developments in 1939, see *History*.

HISTORY

End of Civil War. Gen. Francisco Franco's great offensive against the Loyalist provisional capital at Barcelona, which got well under way in the last week of 1938 (see 1938 YEAR BOOK, p. 688), proved a death blow to the Republican cause. Barcelona was captured on January 26. With its fall and the crushing of the Loyalist armies in Catalonia, the position of the Loyalists in Madrid, Valencia and the surrounding territory became hopeless. After putting down a Communist revolt, the Loyalist command in Madrid surrendered the city on March 28 and by the end of April all organized resistance to the Franco regime collapsed. After 32 months of sanguinary conflict that had wrought untold damage to the Spanish people, the civil war was over.

Campaign in Catalonia. Franco's drive into

Catalonia was launched along a 125-mile front beginning some distance from the Andorra frontier and running southward just east of Tremp and then along the lower Segre and Ebro rivers to the vicinity of Mora de Ebro. It was carried out with some 300,000 veteran troops. General Franco was opposed by about 400,000 Loyalists, but used his overwhelming superiority in airplanes, heavy artillery and tanks to overcome the enemy's numerical superiority. Advancing from Balaguer, Lerida, and Mora de Ebro, the Insurgent columns rapidly broke through the Loyalist defense works and forced a rapid retreat that soon became a rout. While Franco's bombers blasted away at Barcelona, and other communication centers in the rear of the Loyalist armies, Insurgent propaganda contributed to the demoralization of troops and civilians within the Loyalist lines. In repeated radio appeals and pamphlets scattered from airplanes, Franco guaranteed the lives of "all troops who surrendered in good faith" and promised food to the half-starved populace.

To escape being cut off by the rapid Insurgent advance, Loyalist troops hurriedly evacuated Tarragona on January 15. Harassed from the air and hotly pursued by Moorish and Navarrese veterans, the Loyalists were driven from Barcelona with only a show of resistance on January 26. There Franco was greeted with the acclaim of thousands of Insurgent sympathizers. While a thorough "purge" of all Loyalists remaining in Barcelona was being carried out, Insurgent troops drove the demoralized Loyalist army from the rest of Catalanian territory. Thousands of republican soldiers surrendered or were captured, while the rest joined a horde of civilian refugees in precipitate flight across the Pyrenees.

By February 10 the Insurgents had occupied all of Catalonia, and 250,000 Loyalist soldiers and refugees had crossed the border into France. There remained under Loyalist control only 54,500 square miles of territory in east central Spain, extending inland from the Valencia-Almeria sector of the Mediterranean coast to Madrid and the vicinity of Toledo and Granada. Minorca, Loyalist stronghold in the Balearic Islands, surrendered to the Insurgents on February 15.

Loyalist Dissensions. On the eve of the fall of Barcelona, the Loyalist Government withdrew hastily to Figueras in the extreme northeastern tip of Catalonia. Convinced that all was lost, President Manuel Azaña and some members of the Negrin Cabinet favored peace negotiations with Franco. But Premier Negrin declared the war must be prosecuted to the bitter end, and in this he was supported by a majority of the 62 members of the Cortes (out of 473 elected in 1936) who met in the cellars of Figueras Castle on February 2. Shortly afterward all members of the Negrin Cabinet and most members of the Cortes joined the exodus to France to escape capture. Among them went President Azaña, who resigned as head of the Republic on February 28.

From France Premier Negrin and his cabinet returned by airplane to Madrid. There Negrin proclaimed that his government would continue the struggle unless Franco agreed to hold a plebiscite to determine the future government of Spain, grant clemency to all Loyalist supporters, and pledge himself to end German and Italian intervention. Insisting on unconditional surrender, Franco prepared to continue the war by organ-

izing offensives against Madrid and Valencia. At the same time he launched a drive in the Cordoba sector that made rapid progress.

This situation led to a split between the military leaders at Madrid and Premier Negrin. Gen. José Miaja, the veteran commander of all Loyalist forces in the Madrid-Valencia sector, favored making peace on the best terms possible. He had about 600,000 troops at his disposal. But their armaments were markedly inferior to the Insurgents. Reserves of munitions were low. Demoralization from hunger and war weariness was spreading from the civilian population to the troops. Moreover the inability of Miaja's forces to wage offensive warfare had been demonstrated during January, when a drive toward the Cordoba-Badajoz railway northwest of Cordoba had stalled after the occupation of 100 square miles of territory without forcing Franco to withdraw troops from the vital Catalanian front.

The Madrid Revolt. Early in March Premier Negrin issued a decree ousting General Miaja. This was countered on March 5 by an anti-Negrin coup carried out by Gen. Segismundo Casado and a group of other Loyalist military leaders, who established a National Defense Council headed by General Miaja and sought to arrest Negrin and his cabinet supporters. Negrin and his associates escaped by airplane to France. But the Communists and other elements in the Loyalist forces determined to carry on the war were not so easily disposed of. Beginning March 6 a series of uprisings against the National Defense Council kept Madrid in armed turmoil for a week. A bitter civil war within a civil war was fought and won by Miaja and his supporters while the Insurgents rested on their arms awaiting the outcome. It was estimated that this fratricidal struggle cost 9000 casualties. About 12,000 alleged Communists were arrested by Miaja's troops.

Loyalist Fleet Interned. The strife between the Communists and the National Defense Council had repercussions throughout Loyalist territory. There were less violent clashes in Valencia and other cities. The anti-Negrin coup in Madrid was followed almost immediately by a mutiny among some sailors of the Loyalist fleet at Cartagena. When the mutineers seized the Cartagena radio station and demanded surrender of the fleet to Franco, the rest of the officers and sailors decided the conflict was over. Eleven naval vessels with a personnel of some 3000 men sailed from Cartagena to the French naval base at Bizerta in Tunisia and accepted internment by the French authorities. Franco then tightened his blockade of the Loyalist coast, ordering the sinking of all ships regardless of nationality that entered the three-mile limit. All hope of relieving the near-famine in Loyalist Spain by food imports was ended.

Madrid Capitulates. Having established its authority throughout Loyalist territory, the Madrid National Defense Council in the middle of March opened peace negotiations with Franco. The latter reiterated his demand for unconditional surrender, and after two weeks of fruitless discussion the Loyalists were forced to accept his terms. In Madrid the last food caches had been opened. Dogs, cats, and rats were being eaten. Conditions in Valencia and other Loyalist cities, all of them overcrowded with refugees from Insurgent territories, were equally bad. Insurgent troops were advancing from the south, west, and

north, and meeting little resistance. Franco sympathizers in Madrid and the other Loyalist cities were preparing to join in the overthrow of Loyalist authority. On March 28 Madrid capitulated, after having withstood 29 months of siege, and within 24 hours the 10 other provincial capitals remaining in Loyalist hands surrendered. General Miaja and scores of other Loyalist military and civil leaders were evacuated by British warships or escaped by air to French North Africa. Only Col. Segismundo Casado, the Madrid defense commander, and Julian Besteiro, the Minister of Interior, remained in Madrid to make the republican regime's formal capitulation to General Franco.

Loyalist Refugees. The collapse of the republic was followed by the dispersion of Loyalist refugees to all corners of the world. The end of the civil war found some 400,000 refugees in France, with 300,000 of these housed in concentration camps near the Spanish frontier. There were thousands of others in French North Africa, England, and other neutral countries. During the remainder of 1939, part of these refugees returned to Spain under guarantees extended by the Franco Government. But many more, facing certain death or long imprisonment if they returned home, preferred to start life anew wherever they could sustain life and liberty. Nearly 50,000 were reported to have settled in Mexico (q.v.) and smaller contingents went to the other Latin American countries and the United States. Others enlisted in the French military forces or accepted work offered by the French Government on roads and other construction projects in the French West African colonies.

The "Government in Exile." A number of leading members of the Loyalist Government gathered in Paris, where a "government in exile" was set up. Friction developed between Premier Negrin and a faction led by Indalecio Prieto, former Socialist Premier, over the disposition of some \$47,000,000 in gold and other government property that had been sent to Mexico City to avert its seizure by the Franco regime. Negrin and his supporters urged that this fund be preserved for counter-revolutionary activities against the Franco Government. The Prieto faction favored using it to finance the settlement of Spanish refugees in new homes. It also accused Negrin and his Foreign Minister, Alvarez del Vayo, of "playing the Communists' game" and of diverting government funds exclusively to Communists and their sympathizers among the Loyalist refugees. In a secret meeting of a committee of the Cortes on July 27, Premier Negrin was ousted as head of the "government in exile" and a permanent subcommittee of Prieto supporters was named to take over his powers.

Franco's Dictatorship. This dissension in Loyalist ranks was duplicated within the Franco Government on an increasing scale once the civil conflict had ended. There had been growing friction among the groups supporting the Nationalist cause in preceding years (see 1937 YEAR BOOK, p. 693; 1938 YEAR BOOK, p. 689).

The Fascist-Monarchist struggle to determine the character of the new Spanish state repeatedly flared out in dangerous hostility after the conclusion of the civil war. That armed hostilities did not ensue was attributed by some observers to Franco's policy of cautious compromise coupled with the progressive concentration of all powers in his own hands. Hugh Gibson, former

U.S. Ambassador to Belgium, after an exhaustive tour of Spain, stated in a London broadcast on Sept. 11, 1939, that Franco "now has more power than was ever exercised by any Spanish ruler, even by Charles V and Philip II."

Governmental Trends. The final form of the new Spain had not been determined by the end of the year, but various actions and decrees of the Franco Government had given it a decidedly Fascist complexion. On April 23 the government restored to Alphonso XIII and all his relatives to the fourth degree the private properties that they owned previous to the establishment of the republic in 1931. Franco significantly chose the title *Caudillo* (chief), analogous to *Fuehrer* and *Duce*, as the official designation for supreme head of the state.

At the first postwar meeting of the Grand Council of the government party in Burgos on June 5, the draft of a law giving Spain a "National Syndicalist basis" was adopted. It called for the creation and control of labor syndicates (workers' and employers' unions) in all branches of industry and commerce; it outlawed strikes and placed industry, commerce, and labor under direct government supervision. In the middle of July all meetings except church services and processions were forbidden without prior consent of Minister of Interior Serrano Suñer. These and other measures led the Monarchists to fear that Franco contemplated the immediate establishment of a Fascist government with Serrano Suñer as Premier and himself as chief of state.

During July and August opposition to such a course rapidly crystallized. Late in July Franco deposed several outstanding Monarchists for openly criticizing his course, including Gen. Queipo de Llano, military governor of Seville, and Gen. Juan Yagüe, commander of the Moroccan army corps. Generals Miguel Aranda, José Solchaga, and José Moscardo were other outstanding leaders of the anti-Fascist forces. Their strength was such as to defer any plans Franco might have formulated for the appointment of Serrano Suñer as Premier.

Reorganization of Government. On August 4 Franco published a decree perpetuating and enlarging his powers as commander-in-chief of the armed forces, leader of the government party (*Falange Española Tradicionalista*) and supreme head of the government. Declaring that he was "responsible only to God and to history," he assumed power to issue decrees and laws without consulting his Ministers. The army was incorporated in the government party, which already included all other pro-Franco political groups. Powers of the National Council of the government party were enlarged. Its members, 50 to 75 in number and representing the various Nationalist political interests, were empowered to determine the structure of both the government party and state, control syndical organizations and foreign affairs, and act upon other matters submitted to them by the *Caudillo*. As President of the National Council, Franco was also to name the Secretary-General, a permanent official with wide powers and *ex officio* a Cabinet officer.

A Political Junta was established as the permanent governing body of the government party. Composed of delegates to the National Council, it was second in importance to that body. Another decree of August 10 established a Council of National Defense headed by Franco and including

the Ministers in charge of the Army, Navy, and Air portfolios. On the same day Franco reconstructed his government on the basis of the foregoing decrees. He assumed the Premiership himself and named Serrano Suñer as president of the government party's Political Junta and Minister of Government, a post controlling public order, interior affairs, sanitation and health. Gen. Augustín Muñoz Grande replaced Fernández Cuesta as Secretary-General of the government party. Other members of the new Cabinet included: Foreign Affairs, Col. Juan Beigbeder y Atienza; Public Works, Antonio Peña; Army, Gen. José Varela; Navy, Vice Adm. Salvador Moreno; Air, Gen. Juan Yague; Justice, Esteban Bilbao Eguia; Finance, José Larraz Lopez; Industry and Commerce, Luis de Alarcon; Agriculture, Joaquin Benjumea Burin; Education, José Ibañez Martín.

The significance of this reorganization was variously interpreted as a Fascist victory, a Monarchist triumph and the establishment by General Franco of a nice balance between the Fascist extremists and the conservative generals. At any rate friction within government circles was less in evidence during the remainder of the year. On September 12 the new Constitution of the government party was published. It empowered Franco secretly to select his successor. The name of the successor was to be proclaimed after the *Caudillo's* death by the Political Junta of the party. The constitution also provided for the establishment of an advisory council of 90 members, including 9 Cabinet officers and 11 generals, to study and make recommendations concerning reconstruction problems and the fundamental laws. On October 16 the seat of government was transferred from the wartime capital, Burgos, to Madrid.

Later in the year the Fascists extended their propaganda activities in an effort to strengthen their position as against opposition elements. A feature of this campaign was the exhumation at Alicante on November 19 of the body of José Antonio Primo de Rivera, son of Spain's former dictator and founder of the Fascist (Falangist or Phalangist) movement, who was executed by the Loyalists during the civil war. His coffin was carried by relays of Fascist youths from Alicante to the famous Escorial Monastery near Madrid for final interment. The funeral procession took 10 days to cover the 284-mile journey (see accompanying illustration).

Demobilization. After a series of victory parades in Madrid and other leading cities, in which German and Italian troops participated, Franco in the middle of April commenced demobilization of his army of about 1,000,000 men. By the middle of the summer about 650,000 men had returned to civil life and 350,000, comprising the permanent army, remained under arms. The new standing army was twice the size of that under the republic and was even more top-heavy with officers. It included eight army corps of three divisions each. Four divisions (one Moorish) were quartered in Spanish Morocco, two in the Balearics, two in the Canary Islands, and one in Spanish West Africa. The main garrison points selected in Spain proper were Barcelona, Madrid, Seville, Cadiz, Cartagena and Ferrol. In each of these cities a military governor with the rank of general was appointed by the army Chief of Staff.

Liquidation of Opposition. In the months following the collapse of Loyalist resistance, the

Franco regime carried out a systematic purge of all elements that were either actively hostile or passively indifferent to the Franco cause during and before the civil war. The Law of Political Responsibilities issued Feb. 13, 1939, set up a national tribunal and regional courts to try not only persons charged with common law crimes but also those accused of "putting obstacles in the path of the providential and inevitable triumph of the National movement." According to the decree, members of 25 organizations and political groups, including the freemasons, and practically all those who actively or passively sympathized with the Loyalist cause were punishable by exile, loss of civil rights, imprisonment, or confiscation of property. More severe penalties, including death, were imposed on Loyalists found guilty of participating in or abetting executions and murders of Insurgents and their sympathizers, attacks upon priests and nuns, etc.

Anti-Franco Outbreaks. Despite these measures, opposition to the Franco regime continued to show itself from time to time. In June and July severe disturbances occurred in Asturias. Thousands of former Loyalist militiamen, who turned outlaws after the war ended, pillaged the countryside near Oviedo and repulsed a Civil Guard detachment sent to end their activities. A campaign by regular troops was required to drive them out. But when the troops departed, the outlaws resumed their activities.

Church Influence Restored. The government also sought to weaken republican and anti-Franco sentiments among former Loyalists by large-scale propaganda and by restoring the influence of the Church. All civil marriages contracted in Loyalist territory during the civil war were annulled pending validation by a religious ceremony. However the government's intention to control the Church was indicated by a decree of July 23 forbidding all religious gatherings and processions that were not specifically authorized by the civil governors of the provinces.

On November 15 the government resumed payments of 62,000,000 pesetas (\$6,200,000) annually to the clergy, as provided for in the 1851 concordat. Having recognized the financial provisions of the concordat, General Franco invoked other provisions giving the Spanish Crown the right to appoint and control the Spanish bishops. He demanded removal of Francisco Cardinal Vidal y Barraquer, Archbishop of Tarragona, and several other bishops considered hostile to the Franco regime. The Vatican, however, opposed Franco's demands. It held that the 1851 concordat was no longer in force and insisted on the negotiation of a new accord. This dispute was still unsettled at the year end.

Meanwhile the autonomy exercised by Catalonia and the Basque Provinces under the Republic was ended. Basques and Catalonians were forbidden to speak their regional languages.

The Nationalist measures were not exclusively repressive. Efforts were made to win support among the masses by minimum wage laws, public health services, more adequate unemployment relief, and various other social reforms. Yet the benefits derived from these measures were offset in large part by the rapid rise in prices, the severe shortage of food and other necessities, and the sharp increases in taxation that took place during the year.

Economic Reconstruction. The devastation wrought during the civil war was so great that

Franco's Minister of Public Works, Alfonso Peña, estimated in July that the task of reconstruction would take 12 years. On April 1, before a complete survey of the reconstruction problem had been made, Joaquín Benjuméa, director of Franco's Bureau of Devastated Regions, placed the cost of repairing war damages at 10,000,000,000 pesetas. Subsequent reports indicated that this sum was far too low.

To make matters worse, there was a great shortage of most of the raw materials and manufactured articles needed for reconstruction. The factories and foundries that remained intact were disorganized, and there was a grave lack of skilled workmen. Nor were funds or credits available for purchasing needed raw materials and manufactures abroad. Lacking foreign exchange, Spain sought to revive her foreign trade and obtain materials for reconstruction by limiting imports from any one country to the value of Spanish exports to that country.

Previous to the outbreak of the European war on September 1, Spain carried on a substantial barter trade with Germany. All available supplies of iron ore, pyrites, copper, mercury, hides and skins, olives, olive oil, and cork were shipped to the Reich in exchange for machinery, automobiles, electrical equipment, and a wide range of other manufactures. But with the establishment of the Anglo-French blockade of Germany, this trade was largely destroyed. Some increase in the small barter trade with Italy followed, but the Spanish Government was forced to slacken the pace of reconstruction while seeking to find new foreign markets and credits.

The chaotic state of Franco's finances, combined with the large foreign commercial debts outstanding since before the civil war, handicapped the Franco Government in obtaining foreign credits and loans on acceptable terms. The currency situation was improved by the return of \$39,730,000 in gold stored in French banks by the Loyalist Government and ordered delivered to the Franco regime by a Paris court on July 26. In August cotton obtained on credit in the United States permitted the reopening of the Catalan textile mills. On September 14 the Bank of Spain announced that it would resume interest payments on the national debt. Twelve outstanding bond issues bearing interest at 4½ to 6 per cent were converted into one 4-per-cent issue on October 9.

Labor Policies. For the rough work of reconstruction not dependent upon foreign equipment and supplies, there was plenty of labor available. A large proportion of the 650,000 Loyalist war prisoners were held in concentration camps and engaged under a system of forced labor on reconstruction projects.

Along with a decree rationing food throughout Spain, the government on May 16 made labor on reconstruction projects obligatory for all men between 18 and 50. A decree of July 30 required all men of these ages to work 15 days each year for the state without pay, or to pay an equivalent sum to the national treasury. By other decrees the government had previously established the 8-hour day and a minimum daily wage of about 88 cents. These safeguards did not apply to the labor of war prisoners.

Financing Methods. Funds for reconstruction purposes were obtained from the expropriated properties and fines levied upon Loyalists and others under the Law of Political Responsi-

bilities, individual contributions, Treasury advances, and bonds issued by the Institute of Credit against first mortgages and loans. All supplies of silver and copper were nationalized, a profit was taken by the government on all foreign exchange transactions, trade was controlled and the economic activities of the nation were brought increasingly under government supervision and guidance with the aim of creating new capital for the use of the state by taxing the labor and income of all classes.

Foreign Relations. Once the fall of Barcelona had insured General Franco subsequent victory in the civil war, the rivalries of the European powers in Spain were intensified. Germany and Italy strove to bind Franco firmly to the Rome-Berlin axis, while France and Britain worked to win the Insurgent Government over to a policy of neutrality in the greater European conflict then looming on the diplomatic horizon.

Seeking an early end to the civil war and restoration of the *status quo* in the western Mediterranean, Britain and France renewed their efforts to negotiate peace between the contending Spanish factions. They also pressed the Franco Government to hasten the withdrawal of Italian and German armed forces from Spain. On February 2 France sent Senator Léon Bérard on a mission to Burgos and on February 25 he signed with Count Francisco Gómez Jordana, Franco's Foreign Minister, a pact providing the basis for French recognition of the Franco Government and restoration of normal French-Spanish relations. He obtained assurances of Spain's neutrality, the early withdrawal of Italian and German troops, restoration of French-Spanish commercial relations, and that there would be no wholesale reprisals against the Loyalists repatriated from France. In return France agreed to turn over to the Franco Government gold and art treasures sent by the Loyalist Government to the Bank of France for safekeeping along with the ships, trucks, arms, and other properties taken into French ports and border cities by Loyalist refugees.

Meanwhile the British Government had served as intermediary in negotiating the surrender of the Loyalist garrison at Minorca in the Balearics, receiving in return a promise that no Italian armed forces would be permitted on this strategically placed island. In reply to intimations that Italy would not withdraw its forces from Spain until Mussolini's claims on France had been satisfied, the French Foreign Minister declared on February 7 that France would not permit "any foreign state to menace the integrity of Spain and thus the security of France." In this stand France received a pledge of armed support from Britain. On February 27 Britain gave *de jure* recognition to the Franco regime and France did likewise the following day. Both governments acted upon written assurances that foreign troops would be withdrawn from Spain as soon as the civil war ended.

Friction with Britain and France. No sooner had recognition been extended than Franco's foreign policy took a turn hostile to France and Britain. His order to sink at sight all neutral ships attempting to run the Insurgent blockade brought a sharp warning from the British Government. On March 27 the Franco Government signed the anti-Comintern pact, thus tying itself more closely to Italy, Germany and Japan. The participation of Italian and German troops in



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SURRENDER OF CATALONIA

Part of the International Brigade entering the French border town of Le Pertus with the retreating Loyalist Catalonian army in February, 1939



Wide World

THE FALL OF MADRID

Franco's troops being greeted by Nationalist sympathizers when they entered the capital on Mar. 28, 1939

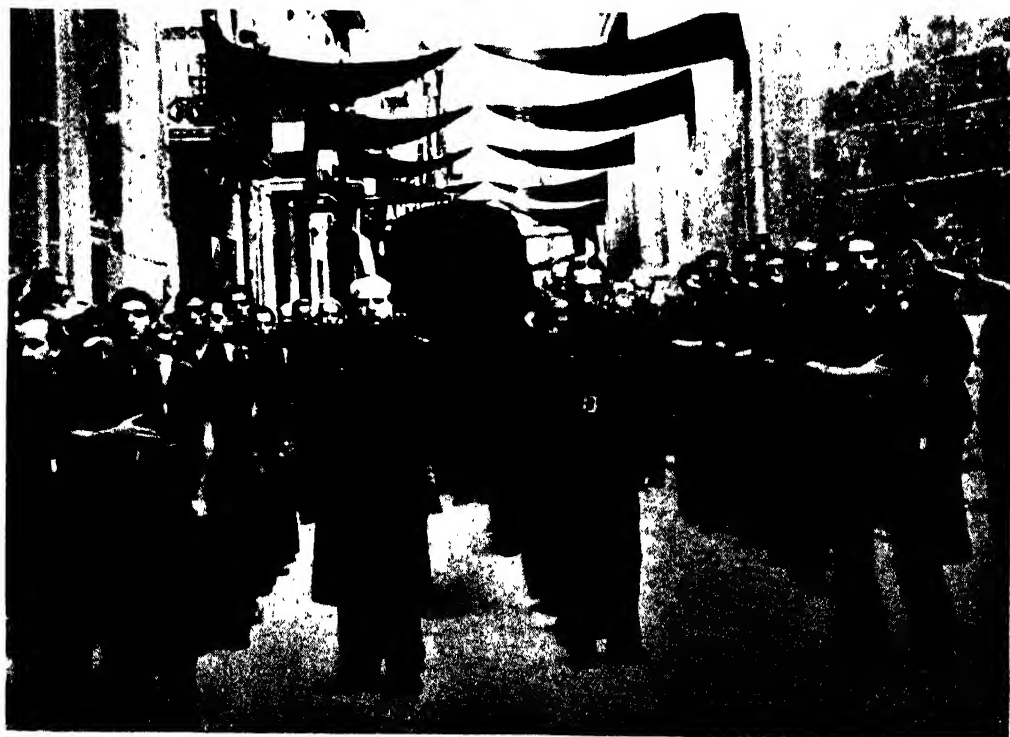
SPAIN



Brown Brothers

GERMANY CELEBRATES FRANCO'S VICTORY

Five thousand men of Nazi Condor Legion parading through Hamburg on May 31, 1939, upon return from their successful intervention in Spanish civil war. Field Marshal Hermann Goering (with raised baton) is taking the salute



Wide World

REBURIAL OF FASCIST LEADER

A relay of Falangists carrying the coffin of José Antonio Primo de Rivera, founder of the movement, from Alicante to Madrid in November 1939, for reburial in the Escorial monastery

the Franco victory parades, visits of Spanish generals and political leaders to Germany and Italy, the open agitation of the Spanish Fascists for a military alliance with the anti-Comintern powers, and the action of the Franco press in demanding Gibraltar from Britain, Morocco from France, and Tangier all indicated the possibility that Spain would join Germany, Italy, and possibly Japan in an attack upon Britain and France.

After the civil war ended, the Spanish side of the frontier opposite Hendaye, France, was hastily fortified. There were heavy Spanish troop concentrations within striking distance of France and Gibraltar. A powerful German naval squadron visited Spanish waters. France and Britain took extensive military and naval precautions to meet a sudden attack upon Gibraltar, Tangier or southern France. But with the withdrawal of Italian and German troops from Spain during June, July, and August, and the successful opposition of leading Spanish generals and others to a military alliance with the Rome-Berlin Axis, relations with Britain and France showed a marked improvement. During the summer the last provisions of the Bérard-Jordana pact were carried into effect by France. After the outbreak of the European conflict on September 1 Franco declared Spain's strict neutrality.

Germany and Spain. The Germans appeared to be playing a much more decisive role in shaping Spanish foreign and domestic policies during the first eight months of 1939 than the Italians.

To emphasize its claims upon Spain with respect to military as well as economic collaboration, the Nazi Government seized the opportunity presented by the return of German troops from Spain late in May to set forth in detail its secret contribution to Franco's victory over the Loyalists. Some 17,000 returning troops of the Condor Legion were acknowledged as part of the Reich's regular fighting forces. In a speech at the victory parade of the Condor Legion in Berlin on June 6 Chancellor Hitler declared that he had responded to Franco's appeal for help in July, 1936. (The civil war began July 17, 1936.) However the Spanish generals who accompanied the Condor Legion to Germany were among those who later joined most vigorously in opposing a military and economic alliance with Italy and Germany.

The Russo-German rapprochement beginning with the non-aggression pact of August 24 nullified much of the prestige and friendship that the Reich had won by military aid to Nationalist Spain during the civil war.

Relations with Italy. The Italian press was careful to point out once the Spanish civil war was over that Italy made a much greater material contribution to Franco's triumph than Germany.

Unofficial Rome estimates placed the value of the airplanes, arms, munitions, and supplies sent Franco by Mussolini during the war at 10,000,000,000 lire. Count Galeazzo Ciano, Italian Foreign Minister, in an article appearing in the Milan magazine *Gerarchia* on May 30, placed total Italian casualties in Spain at 3327 dead and 11,227 wounded. About 10,000 Italian troops had been returned to Italy in October, 1938 (see 1938 YEAR BOOK, p. 689). The remainder were returned in batches after the close of the civil war. About 20,000 reached Naples on June 6, 1939, and at least four additional but smaller contingents arrived in Italy during the balance of June and July.

In June, while Serrano Suñer, various leading

Spanish generals, and four battalions of Spanish troops were in Rome to express appreciation of Mussolini's aid, official Italian publications made known for the first time the full extent of Il Duce's contribution. *Forse Armate*, the Army and Navy journal, on June 8 asserted that 149 vessels of the Italian navy performed 870 war missions during the Spanish conflict. These included aiding the repulse of the Loyalist expedition against Majorca in the Balearics in August, 1936; transporting 100,000 troops to Spain from mid-December, 1936, to mid-April, 1937, together with 4370 trucks, 750 cannon, and 40,000 tons of other material; delivering supplies for the subsequent maintenance and reinforcement of this initial force; prosecuting submarine warfare against Loyalist warships and Loyalist and neutral merchant vessels trading with Loyalist ports; aiding Franco's blockade in other ways; bombarding Loyalist coastal fortifications and ports, etc.

Official figures issued at Rome on June 10 showed that the Italian Air Force sent 6011 men, with an unspecified number of planes, to Spain. According to the report, these men made 5318 bombing raids, during which 130,000 tons of explosives were dropped, and 224 ships damaged or sunk. It was claimed that the Italians shot down 903 enemy planes while losing only 86 planes, 175 dead and 192 wounded. When the Italian forces returned home, they left their artillery, planes, tanks, trucks, and other heavy war equipment behind in Spain.

The Rome Government sought payment for the arms and equipment supplied to Franco in the form of Spanish iron ore, mercury and other raw materials needed by the Italian munitions industry. Some such payments were forthcoming, but the German barter system diverted the bulk of Spanish raw materials to the Reich.

For other foreign relations, see CHILE, COLOMBIA, CUBA, FRANCE, GERMANY, GREAT BRITAIN, ITALY, MEXICO, PORTUGAL under *History*; FASCISM; MILITARY PROGRESS; NAVAL PROGRESS.

SPANISH-AMERICAN LITERATURES. The following presentation of the year's literary activities must not be taken as exhaustive, nor must the omission of any country be held as evidence that it was non-productive in 1939.

The following works are of general interest: F. B. Luquiens, *Spanish-American Literature in the Yale University Library* (very important); R. L. Grismer, *Indice de Doce Mil Autores Hispanoamericanos* (very useful); Arturo Torres-Rioseco, *La Novela en la América Hispana* (only the first part of his projected work) and *Antología de la literatura hispanoamericana* (excellent anthology, with careful studies of movements and genres, and a glossary of Americanisms).

Argentina. Of the materials that have come to hand, the heaviest contributions are in the field of erudition, with verse occupying second place.

Prizes. National Prizes for Literature for this year were awarded as follows: first, (20,000 pesos) to Juan Pablo Echagüe, for his *Por donde corre el Zonda*; second, (12,000 pesos) to Eduardo Mallea, for his two works, *La ciudad junto al río inmóvil* and *Historia de una pasión argentina*; and third, (8000 pesos) to Norah Lange, for her *Cuadernos de infancia*.—The Dirección Municipal de Cultura of Rosario set up a literary contest for 1938, the prizes being 3000 pesos each for the best works in prose and in verse respectively. The decision of the judges appeared in 1939 as follows: to Miguel Ángel Correa (better known by

his pseudonym of Mateo Booz), for his *Alelukas del brigadier* (a splendid evocation, of the culminating moments of the life of the Santa Fe leader, Estanislao López); and to Hernán Gómez, for his *Sonata del amor filial* (a superb poem, in 40 sonnets).—*Premios Municipales de Literatura de Buenos Aires* for 1938. For verse: Juan Oscar Ponferrada, for *Flor Mitológica*; Margarita Abella Caprile, for *Cincuenta Poesías*; and Javier Villafañe for *Coplas, poemas y canciones*; and for prose: Luis Emilio Soto, for *Crítica y Estimación*; Bruno Jacoveilla for *Confortantes y prodigiosas historias del poeta Jerónimo Esteban Malanik*; and Armando Cascella, for *Cuadrilla volante*.

Fiction. J. Martínez Jerez, *Domingo de bodas* (excellent prose tales); C. A. Leumann, *Los gauchos a pie, Novela*; Manuel Gálvez, *Hombres en Soledad* (very powerful novel, analyzing a new kind of *weltschmerz*); Mateo Booz, *La mariposa quemada, Novela* (thoughtful study of dangers to provincials who move to the national capital), and *La ciudad cambió la voz* (meant to picture the growth of Rosario).

Versé. Emilio González Chaves, *Palabras sin Edad, Poesías*; Antonio de la Torre, *La tierra encendida* (redolent of the soil); Juan Ramón Rodríguez Morel, "*Nemesio*," *Poema gauchesco* (fine work continuing the tradition of the personality of Martín Fierro); Vicente Barbieri, *Fábula del corazón* (exquisite verse, meant for the élite); Ernesto Marrone, *Diez caminos al horizonte* (with this book of verse the critics consider that the author has found, and is master of, his world).

Erudition. Antonio Aita, *Comentarios* (keen studies concerning certain important writers); Celso Tindaro (pseudonym of Pedro B. Franco), *Ideario de Juan B. Justo* (the motivating ideas of the founder of the University of La Plata); José Gabriel, *El nadador y el agua*; Ricardo Lavene, *Historia de la Nación Argentina* (splendid, substantial work, published by the National Academy of History); Rafael Alberto Arrieta, *Florencia Balcarce* (critical edition, with masterly biographical study of the author, on the centenary of Balcarce's death); Carlos Roberts, *Las invasiones inglesas del Río de la Plata* (detailed and documented history); Manuel García Morente, *Leciones Preliminares de Filosofía*; Raúl Larra, *Payró: El Hombre y la Obra* (very well documented work); Arturo Capdevila, *Córdoba del Recuerdo* (new edition of a work that originally won a National Prize in Literature); Emilio Bercher, *Diálogo de las sombras, y otras páginas* (a vindication of one of Argentina's greatest writers); Julio Aramburu, *Historia Argentina* (civil history with a broad spirit of American solidarity); Eduardo González Lanuza, *Ni siquiera el diluvio*; Segundo L. Moreno, *La Argentina, futura gran potencia mundial*; Ricardo Rojas, *Retablo Español* (masterly study of Spain in its intimate aspects, social, spiritual, historic, permanent, and passing—the author's impressions were received during his visit in 1908, and they have been maturing in his sub-conscious mind and heart for 30 years).

Drama. The outstanding dramatic event of the year was the performance in the Teatro Nacional de Comedia of the verse tragedy in four acts, *Ollantay*, by Ricardo Rojas. The action takes place in Cuzco and other places in the Empire of the Sun during the reign of the Inca Túpac-Yupanqui. With this play there was presented

for the first time on the stage an evocation of America before the discovery.

Academia Argentina de Letras. On June 22, the Academy held the solemn public reception of Roberto F. Giusti, Director of *Nosotros*. He had been elected in 1936, but, because he was to occupy the chair which bears the name of the poet Juan Cruz Varela (the centenary of whose death was celebrated this year) he wished his entrance discourse to deal with the author's literary and personal figure, as well as with the sentiments of the literary generation to which he belonged: *Juan Cruz Varela y la generación poética de la Revolución*. Giusti was received by the academician Arturo Marasso, the author of *Rubén Darío, y su creación poética*.

Necrology. Juan Bautista Terán, Argentine jurisconsult and man of letters, was born in San Miguel de Tucumán, Dec. 27, 1880. In 1902, he received the degree of Doctor of Laws and Social Sciences from the University of Buenos Aires. That same year he became professor of the Castilian Language and philosophy in the Colegio Nacional of his native city, passing later to the University, whose rector he became in 1914. He served for a while as Deputy in the Legislature. In early youth he became one of Argentina's most notable jurisconsults, and was named Doctor honoris causa by the Universities of Lima, Santiago de Chile, Chuquisaca, and La Plata. He founded the *Revista de Letras y Ciencias*, collaborated on many others, published a number of works on history and law, among which notably, *La Universidad y la vida*, *La salud de la América Española*, and *El nacimiento de la América Española*. He died late in 1938, too late for our account of 1938.

Chile. This year the only Chilean literary works that have reached us are in the field of erudition.

Erudition. Since our announcement last year of the appearance of vol. viii of the *Obras Completas de Benjamín Vicuña Mackenna*, three other volumes have appeared: ix—*El Ostracismo de las Carreras*; x and xi—*Historia de Santiago*, vols. i and ii.—Domingo Amunátegui Solar, *Pipiolos y Pelucones* (incidents and personages in the War of Independence); Amanda Labarca H., *Historia de la Enseñanza en Chile* (second volume of her trilogy on education, a fine bit of scholarly work); José González Carballo, *Vida, obra, y muerte de Federico García Lorca* (1938) (splendid presentation and interpretation of García Lorca as man and poet); José M. McBride, *Chile: su tierra y su gente, Versión castellana de Guillermo Labarca H.* (Spanish version, published by the University of Chile, of an American work originally published by the American Geographical Society); Víctor Domingo Silva, *La Pampa trágica* (important collection of 26 stories and one play, with an important prologue); *Obras escogidas de Rubén Darío publicadas en Chile, Tomo I: Abrojos, Canto épico, Rimas, Azul* . . . (edición crítica y notas de Julio Saavedra Molina y Erwin K. Mapes), (homage of the University of Chile on the 50th anniversary of the publication of *Azul*: 1888–1938).

Necrology. Antonio Bórquez Solar died in July, 1938, but the news reached us too late for last year's account. Born in Ancud (capital of the Chiloé Archipelago) in 1873, this pedagogue, poet, statesman, and man-of-letters, was graduated with the degree of Bachelor in the Faculty of Philosophy and the Humanities in 1890, and obtained a chair in the University of Chile in 1892,

after being graduated as professor. In 1886 his first literary efforts appeared in *La Juventud*. In 1899 he published a noteworthy *Memoria* concerning pedagogy in the first congress of this nature held in Santiago. He was editor of the dailies *La Lei*, *La Tarde*, and *El Ferrocarril*. He held the chair of Spanish Philology in the National School Barros Arana. He became known as Chile's greatest poet, after the death of Pedro A. González. Among his best works are: *Campo lírico* (collection of poems); *El Dolor del Quijote* and *El alma de una raza* (very highly praised); *La floresta de los leones* (his second book of verse, also highly praised). Other works are *La epopeya de Chile*, and *La Quintrala*, which obtained the first prize in the dramatic competition organized by the celebrated company, Guerrero-Mendoza.

Colombia. Once again the majority of the literary material that has reached us from Colombia belongs in the field of erudition.

Verse. *Luz que flota en el olvido* (*Poema colombiano en 120 sonetos originales de varios autores*), (selections, arrangement, and illustrations by Carlos García Prada); Carlos Belén Groot, *Almas y Cosas de mi Ciudad, 1538-1938, IV centenario de la fundación* (contains 129 sonnets to important persons and incidents—nicely illustrated); *Prosistas y Poetas Bogotanos* (published in 2 vols. by the Ministerio de Educación Nacional).

Erudition. *Bogotá 1538-1938* (published by the Sociedad de Mejoras y Ornato de Bogotá); Eduardo Santos and Agustín Nieto Caballero, *Discursos* (the President of the Republic and the Rector of the University of Bogotá respectively give a brief history of the University in the formal opening of the academic year); José Manuel Marroquín, *Discursos Académicos y otros escritos sobre filología y corrección del lenguaje*; Luis López de Mesa, *Disertación sociológica* (very important); Antonio García, *Cinco Grandes Poetas Colombianos* (Valencia, Maya, Barba Jacob, León de Greiff, Pardo); Rufino José Cuervo, *Escritos Literarios* (posthumous publication which forms a companion piece to his *Disquisiciones filológicas*—both works assembled and edited by Nicolás Bayona Posada); P. Félix Restrepo, *El alma de las palabras: diseño de semántica general* (second edition of a work first published in 1917 and long out of print, but which is one of the soundest treatments, in small space, of the fascinating study of semantics), and *Corporativismo*.

Costa Rica. Alejandro Alvarado Quiros published *La Democracia*, a lecture and some keen, well-documented articles on the general subject of democracy.

Cuba. The following materials have come to hand, chiefly of erudition.

Erudition. José María Chacón y Calvo (litterateur, scholar, and diplomat), *Sánchez Albornoz, Medievalista y hombre actual*; and *Criticismo y Libertad, Evocación de José Francisco Heredia, Regente de Caracas*, as also *Estudios Heredianos* (careful, well-written study); Pastor del Río, *La Misión del hombre americano* (stirring call to co-operation in a real, spiritual Panamericanism); Ciro Espinosa, *La tragedia del Guajiro* (profound study of the Cuban peasant problem); Rafael Esténger, *Los amores de cubanos famosos* (brief, living portraits of 13 outstanding Cubans of the XIX century); Raúl Roa, *Vocación, palabra, y ejemplo de José Gaos* (fine presentation of the author and his works); Herminio Portell Vilá,

Historia de Cuba en sus relaciones con los Estados Unidos y España—Tomo II—(1853-1878) (the author was for several years in Cuba a Guggenheim Fellow and has produced a fine work).

Verse. Isa Caraballo, *Vendimia de huracanes* (very well received by the critics); and Antonio Iraizoz, *Lecturas Cubanas*, 2d ed. (beautiful and useful).

Academia Nacional de Artes y Letras. Although still somewhat in arrears, the Academy continues to publish its *Anales*. Vols. xviii and xix have recently arrived, bringing us up to June, 1937. Some of the titles, taken at random, will show the variety of interests concerned: Notes concerning Cuban Music; Art and Musical Art in Mexico; The Literary Theatre in North America.—Eduardo Sánchez de Fuentes reported to the Academy his attendance at the International Congress of Music, in New York, and entitled it *Intercambio Musical*.—José Antonio Ramos, member-elect, took his seat, reading as his entrance discourse *La voz nueva de América*.

Dominican Republic. The Dominican historian and diplomat, Max Henríquez Ureña, *La Independencia Efímera* (the incident here treated is the brief Dominican Independence of 1821); and *El Continente de la Esperanza—La Solidaridad Americana y La Conferencia de Lima*.

Verse. Emilio A. Morel, *Armas Dominicanas* (poem which four years ago won the first prize in a literary competition); Francisco R. Mejía, *Jililios y Paisajes*.

Erudition. Abigail Mejía, *Ideario feminista* (notes and thoughts on the feminist movement in the Dominican Republic); Horacio Pérez Licairac, *Trazos en la arena*, and *La Isla de la Leyenda*; Pedro René Contin Aybar, *Federico García Lorca, Poeta Popular* (excellent); Frai Cipriano de Utrera, *Centenario de José María Heredia—Homenaje de la República Dominicana* (excellent, well-documented study, clearing up many obscure points in Heredia's life); E. Rodríguez Demorizi, *El Cantor de Niágara en Santo Domingo* (fine study of his residence in the Dominican Republic).

The *Academia Dominicana de la Historia* continued its careful studies into Dominican History, and its nonagenarian Director, Federico Henríquez Carvajal, published Bani: *Parcela Histórica de su Vida en la Villa y en el Valle* (delightful book of reminiscences).

Guatemala. Rafael Arévalo Martínez, *Viaje a Ipanda*, gives us a gracefully written defense of democracies against totalitarian states and a kind of continuation of his recent *El mundo de los maharachías* (with a fantastic plot like some of Poe's tales).

Honduras. Néstor Bermúdez published *Escritores de Honduras* (a fine book calling attention to outstanding literary personages, with a prologue by Santiago Argüello).

Mexico. We have received only works of erudition.

Erudition. J. Lloyd Read, *The Mexican Historical Novel, 1826-1910* (although lacking an index, it is a useful contribution, attractively written); Gregorio López y Fuentes, *Huasteca* (the author treats the oil problem, the most serious aspect of which is moral, not financial); Artemio de Valle-Arizpe (author of many works concerning vice-regal Mexico) recently published two important new volumes: *Cuentos de México Antiguo*, and *Historia de la Ciudad de México según los relatos de sus cronistas* (a fine anthology);

Vicente T. Mendoza (well-known Mexican folklorist), *El Romance Español y el Corrido Mexicano* (a sound study of both the similarities and differences of these two popular expressions, in both words and music, with diagrams and musical illustrations); Carlos Rincón Gallardo (the scholarly Marqués de Guadalupe), *El Charro Mexicano* (an authoritative treatise of every phase of the manly and traditional Mexican sport known as the "charrería," with full information on Mexican customs, costumes, and equestrianism); Manuel Toussaint (an authority on Colonial art and history), *Paseos Coloniales* (interesting articles on Mexican Colonial Architecture, accompanied by historical data, and illustrated with many photographs); Justino Fernández (author of *El Arte Moderno en México*), *Tomás de Suria y su Viaje con Malaspina, 1791* (account of Malaspina's voyage to discover Aníán, which was supposed to exist at the northern part of America—illustrated with drawings, etchings, a map, and reproductions of priceless paintings from the collection of the Marqués de San Francisco).

Necrology. Federico Gamboa, Mexican novelist, critic, dramatist, and diplomat, born in Mexico in 1864, died in Mexico, Aug. 15, 1939. Already in 1890 he was first Secretary of Legation in Argentina and in Brazil, Chargé d'Affaires in Argentina in 1892, ad interim Chief of Division in the Ministry of Foreign Affairs in 1896, First Secretary of Embassy at Washington, Envoy Extraordinary and Minister Plenipotentiary to Central America, ad interim Under-Secretary and later Secretary of Foreign Affairs (1908-09), Deputy, Delegate of the Mexican Government to the Conference on International Maritime Law held in Brussels, 1909, Ambassador to Spain and later Extraordinary Ambassador (1911) to return the visit General Polavieja made to the Embassy on the centenary of Mexico's independence. At the time of his death he was the dean of Mexican men-of-letters; Director of the Academia Mexicana Correspondiente de la Española, Professor of Literature at the National University of Mexico. Among his works the most important are *La última campaña*, drama (1894); *Del natural* (sketches, which have run through several editions); *Apariencias* (1892); *Impresiones y recuerdos* (1894); *Suprema ley* (1895); *Metamorfosis* (1899); *Santa* (1900) and *La Llagu* (both of which went on the silver screen); *Reconquista* (1904); and *Mi Diario*.

Nicaragua. Sofonías Salvatierra's *Contribución a la historia de Centro-América* (2 vols., 1092 pages), (collection of documented monographs, materials dug from the best archives in America, and from the Archivo General de Indias in Sevilla).—Pedro Joaquín Chamorro, at the request of the Academia Nicaragüense de la Lengua, wrote *Jerónimo Pérez, Biografía* (important treatise concerning an outstanding character of Nicaragua during the period between 1828 and 1856).

Panamá. Ernesto J. Castillero wrote *Panamá, breve historia de la República*.—Octavio Méndez Pereira (director of the Panamanian Academy of History) published a very important book, *Antología del Canal, 1914-1939*.

Perú. Luis Alberto Sánchez wrote *La Literatura del Perú*, one of the series of works on *Literaturas Americanas*.—Manuel González Prada died in 1918. His son, Alfonso, has published posthumously four volumes of prose and four of verse, greater in quantity and at times better in

quality than all that had appeared before his death.

Puerto Rico. Pedro Juan Labarthe, author of an admirable book in English: *The Son of Two Nations*, now presents two small dramas: *Los Eternos Tres en Uno* (drama en un acto y tres escenas, para ser representado ante gente sublime), a beautiful study of real life and dreams; and *Los Nietos antillanos*.—Mauricio Magdalena, *Hostos y Albizu Campos* (a timely tribute to Hostos).

Necrology. Puerto Rico suffered a bitter loss to her entire cultural life through the death, on Oct. 23, 1939, of Antonio S. Pedreira. Born in San Juan, P. R., June 13, 1899; graduate of the normal school, 1920; A.B., University of Puerto Rico, 1923; A.M., Columbia University, 1926; Doctor en Filosofía y Letras, Universidad Central, Madrid, 1932, he was professor of Spanish Language and Literature in the University of Puerto Rico, 1921-39; professor at Columbia University and at the Brooklyn Institute of Arts and Sciences, 1926-27; Director of the Department of Hispanic Studies, University of Puerto Rico, 1927-39; President of the Centro de Investigaciones Sociales, 1930-31; co-editor and founder of the review *Índice*; honorary member of the Instituto de Investigaciones Lingüísticas de México; corresponding member of the Sociedad de Altos Estudios de la Argentina, and of the Ateneo Dominicano; and active member of the Ateneo Puertorriqueño.—Among his principal works are: *Aristas: Ensayos* (1930); *Hostos, Ciudadano de América* (1932); *Bibliografía Puertorriqueña* (1493-1930) (1932); *Insularismo, Ensayos de Interpretación Puertorriqueña* (1934); *La Actualidad del Jibaro* (1935); *El Año Terrible del 87* (1937); *Un Hombre del Pueblo*, José Celso Barbosa (1937).

Uruguay. Verse and erudition are offered by Uruguay.

Verse. Ernesto Pinto's new book, *Revelación de la imagen*, raised quite a storm among the critics, but there seems to be general agreement as to the poetic quality thereof: "Ernesto Pinto makes visible therein a pure state of emotion."—Edgar Ubaldo Gentá, *La Epopeya de América* (old Inca, Araucanian, Kechua, and other legends); Gaston Figueira, *Geografía poética de América, Tomo V., Alba en la playa de los mil cocoteros* (poetic description of scenery—Bahía and Pernambuco).

Erudition. Romualdo Brughetti, *18 poetas del Uruguay* (short sketches, followed by selections); Alberto Zum Felde, *La Literatura del Uruguay* (very helpful; one of the series *Literaturas Americanas*); Carlos Vaz Ferreira, *Fermentario* (volume of fine thought-provoking essays).—The publication of the *Obras Completas* of that grand old man, Juan Zorrilla de San Martín, has reached vol. 16.

Necrology. Luis Melián Lafinur, the last survivor of the great generation that influenced so profoundly the civic affairs and the culture of the Río de la Plata, died early in 1939 at the age of 89. Immediately after being admitted to the bar of Montevideo and Buenos Aires, he began teaching Civil Law at the University of Montevideo and soon became a member of the advisory council. The intellectual élite of that epoch had taken refuge in the Ateneo del Uruguay, of which Melián Lafinur was president. He was profoundly versed in English and Latin. He was elected Deputy and made a great reputation as an orator. Al-

though not popular with the successive governments, his learning, his prestige, and his superior aptitudes were such that the government had to use him. Thus, with others, he represented his country at the third Pan-American Conference held in Rio de Janeiro in 1906. Immediately thereafter he was appointed Minister Plenipotentiary in the United States, Mexico, and Cuba. Upon his return home he was elected deputy for a third time and served brilliantly, although nearly blind. Aside from *Las Mujeres de Shakespeare*, his principal publications were two historical works: *Los Treinte y Tres* and *Juan Carlos Gómez*; and two volumes of verse: *Ecós del Pasado* and *Los Grandes y los Pequeños*; and his last work, *Buenos Aires*.

Venezuela. Materials from Venezuela have been chiefly fiction and erudition.

Erudition. José Antonio Calcaño, *Contribución al estudio de la música en Venezuela*; Víctor José Cedillo, *Juan Vicente González*; Enrique Bernardo Núñez, *Una ojeada al mapa de Venezuela*; Pedro Sotillo, *Andanza*; Manuel Segundo Sánchez, *La Prensa Periódica de la Revolución Emancipadora* (documented study of the newspapers of the revolutionary period; 1810-21).

Drama. Julián Padrón, *Parásitas negras* (*Saínete en 3 actos y en 7 cuadros*).

Fiction. Pablo Domínguez, *Ponzoñas* (*Cuentos*); Walter Dupouy, *Tomasote*; José Fabbiani Ruiz, *Agua Salada* (*Cuentos*).

Necrology. Caracciolo Parra León died at the age of 37. Doctor of Political Sciences (1924), Doctor of Ecclesiastical Sciences (1926), Vice-Rector of the Universidad Central de Venezuela (1928-33), Director of the National Library (1936), Professor of the General Principles of Law, of Spanish Law, and of Public Ecclesiastical Law in the School of Political Science of the Central University from 1929 until his death. He was Director of the Office of Inter-American Relations in the Ministry of Foreign Affairs (1936-38), Delegate to the VIII International Pan-American Conference at Lima; Knight of the "Orden Piana," and Gran Premio Hispanoamericano de la Raza, 1932. Among other works these are outstanding: *La Instrucción en Caracas 1567-1725*; *Filosofía Universitaria Venezolana 1788-1821*; *Analectas de Historia Patria*.

JOHN D. FITZ-GERALD.

SPANISH GUINEA. See SPANISH WEST AFRICA.

SPANISH LITERATURE. The aftermath of the war seems to have prevented any considerable amount of literary activity. Nevertheless, there have been some creditable literary performances on both sides of the Civil War, over and above the works of propaganda. The following works which are of interest in the Hispanic field may be mentioned:

War. J. García Mercadal, *Aire, Tierra, y Mar* (*Los más gloriosos episodios de la gesta española*). *Primer Año Triunfal* (a frankly pro-Franco account of the first year of the Spanish Civil War—Premio Nacional de Literatura); Angel Lázaro, *La Verdad del Pueblo Español* (speeches and essays upon persons and things in Spain before and during the recent war—published in Puerto Rico); Concha Espina, *Esclavitud y libertad, diario de una prisionera* (day by day account of her living in territory dominated by the Loyalists until the Nationalists finally conquered—pro-Franco); Karl Marx and Frederick

Engels, *Revolution in Spain* (despite its tendentiousness, the work is welcome as a collection of historical documents); Luis Quintanilla, *All the Brave*, Preface by Ernest Hemingway, Text by Elliot Paul and Jay Allen (a terrific indictment of war in general and fascism in particular, with paintings by a great artist, who is also a great soldier); Robert Brasillach and Maurice Bardèche, *Histoire de la Guère d'Espagne* (despite its appearance so soon after the war, it presents the war very comprehensively as a whole); Arthur F. Loveday, *World War in Spain*.

Verse. *Poems of Federico García Lorca* (with English translations by Stephan Spender and J. L. Gili—selection and introduction by R. M. Nadal: a friend of the poet), (fine selection; translations not always accurate; valuable contribution); Rosalía de Castro, *Beside the River Sar* (Selected Poems from *En las orillas del Sar*), translated from the Castilian, with annotations and a preface, by S. Griswold Morley.

Erudition. Ramón Menéndez Pidal, *La España del Cid* (new single volume edition, reproducing the original text in its entirety, with some corrections but omitting the voluminous appendix with documentary notes); Francisco Rodríguez Marín, *En un lugar de la Mancha . . .* (*Divagaciones de un ochentón evacuado de Madrid durante la guerra*); and *La Gatomaquia, poema jocoserio de Lope de Vega Carpio* (*Primera edición anotada en España*), (was prepared for the tercentenary of the death of the poet, but could not be published until now); Karl Vossler, *Einführung in die Spanische Dichtung des Goldenen Zeitalters* (author's translation of his own lectures given at Santander in 1933 and published in 1934 as *Introducción a la literatura española del siglo de oro*); Narciso Alonso Cortés, *El Pronombre "se" y la voz pasiva castellana* (a valuable treatise), and *Manual de composición literaria* (a serious work on rhetoric); Julio Berzunza, *Alexander the Great and the Alexander Romances from the Collection of Julio Berzunza* (very valuable contribution to our knowledge of "Alexandriana"); Juan Suñé Benages and Juan Suñé Fonbuena [Father and Son], *A Critical Bibliography of Editions of the "Don Quixote" printed between 1605 and 1917*, continued to 1927 and now edited by J. D. M. Ford and C. T. Keller (lists editions and translations in 42 languages and totals thus far 1369 items); E. Allison Peers, *Spain, the Church, and the Orders* (a careful study); Victor Pradera, *The New State* (posthumous translation by Bernard Malley), (may have considerable influence on Spanish politics of tomorrow); Alice H. Bushee, *Three Centuries of Tirso de Molina* (a very valuable contribution); Julio Jiménez Rueda, *Juan Ruiz de Alarcón y su tiempo* (well documented, devoted to the personality of the author, is indispensable); Lope de Vega, *Del monte sale (quien el monte quema)*, (Palaeographic edition with study and notes by Emilio Le Fort Peña); *La Estrella de Sevilla*, Notes and Vocabulary by Frank Otis Reed and Esther M. Dixon, introduction by John M. Hill (a very fine edition which has only just appeared several years after the death of Dr. Reed); Baltasar Gracián, *El Criticón* (vol. ii, which completes the excellent critical and annotated edition of M. Romera-Navarro); Gilberte Guillaumie-Reicher, *Théophile Gautier et l'Espagne* (very careful and sympathetic study, following Gautier's own footsteps); Manuel García Morente (Dean of the Faculty of Philosophy and Letters of the Central University of Mad-

rid), *Lecciones preliminares de filosofía Argentina* (prepared, while the author, in exile, was serving as Dean of the University of Tucumán, for his Argentine students of philosophy—a simplification, with history and criticism—is reported already to have been officially adopted by Peruvian and Chilean Universities); Guillén de Castro, *Las Mocedades del Cid* (edition by G. W. Umphrey); Ruth Matilda Anderson, *Pontevedra y La Coruña* (careful study, illustrated with 682 photographs); Florence Lewis May, *Hispanic Lace and Lace-Making* (with 432 illustrations) [these last two books mentioned were published by the Hispanic Society of America]; the great surgeon and pathologist, Gregorio Marañón, even in exile, has given us another of his psychological biographies of great men of the past: *Tiberio Historia de un resentimiento*.

Spanish Academy. Eduardo Marquina, the poet, dramatist, and actor, was admitted in a session held in San Sebastián Aug. 4, 1939.

Necrology. Antonio Machado Ruiz, Spanish poet, dramatist, and scholar, was born in Seville, July 26, 1875, studied under Giner de los Rios in the Institución libre de Enseñanza, was Vice-Consul of Guatemala in Paris in 1900, taught French in the Institute of Soria, 1907, and (after being government fellow to study philology in Paris in 1910) in the Institute of Baeza, going thence in 1919 to the chair of literature in Segovia. He was a Doctor of Philosophy and Letters, Member of the Spanish Royal Academy of the Language, Member of the Hispanic Society of America, Correspondiente of the Real Academia Sevillana de Buenas Letras, and possessed the Palmes Académiques of France. He collaborated often with his brother Manuel. Between them they were an influence for the best lyric tradition of Modern Spain. Antonio died in the French Pyrenees, Feb. 22, 1939.

JOHN D. FITZ-GERALD.

SPANISH WEST AFRICA. The two Spanish colonies in western Africa: (1) Spanish Guinea (comprises Rio Muni, 9470 sq. mi., 89,130 inhabitants, on the Gulf of Guinea and surrounded by French Equatorial Africa; the island of Fernando Po, 795 sq. mi., 2987 inhabitants, and the adjacent Corisco islands, 14 sq. mi., 2987 inhabitants). Total area, 10,279 square miles; population, 112,990. Capital, Santa Isabel. Cacao, sugar, and coffee are the chief products. (2) Western Sahara (includes Rio de Oro with Adrar, 109,200 sq. mi., 12,000 inhabitants, adjoining the southern border of French Morocco; the nearby enclave of Ifni, 965 sq. mi., 20,000 inhabitants). Total area, 110,165 square miles; population, 32,000. Capital, Villa Cisneros (Rio de Oro). Fishing is the main occupation of the people.

SPINGARN, J(OEL) E(LIAS). An American author and publicist, died in New York, July 26, 1939, where he was born, May 17, 1875. He was educated at Columbia University (A.B., 1895; Ph.D., 1899) and at Harvard University (1895-96). After getting his doctorate degree he joined the faculty of Columbia University, becoming professor of comparative literature in 1909. He was the founder of the *Journal of Comparative Literature* and was its managing editor from 1902 until 1914. In 1911 his connection with the University was severed in an academic dispute.

He published the *Amenia* (N. Y.) *Times* from 1911 to 1926, and in 1919 aided in the founding of the publishing firm of Harcourt, Brace & Co.,

serving as literary adviser until 1932. An advocate of full rights for the Negro, Mr. Spingarn became associated with the National Association for the Advancement of Colored People in 1913, and in the following year established the Spingarn Medal awarded annually "to the man or woman of African descent and American citizenship who has made the highest achievement during the preceding year in any honorable field." After 1930 he was president of the Association.

A follower of Theodore Roosevelt, he was an unsuccessful Republican candidate for Congress in 1908, and in 1912 and in 1916 was a delegate to the Progressive National Convention in Chicago. He founded a movement for rural co-operative recreation in 1910. Among his many interests was gardening, and he was particularly interested in the growing of clematis, of which he had the largest collection in the world. In 1937 he published *Henry Winthrop Sargent and the Early History of Landscape Gardening and Ornamental Horticulture in Dutchess County, N. Y.*, and received the Jackson Dawson Memorial Medal of the Massachusetts Horticultural Society. He contributed to Taylor's *Garden Dictionary* and Markham's *Clematis*.

Besides contributing to the *Dictionary of American Biography* and the *Cambridge History of English Literature*, he wrote *A History of Literary Criticism in the Renaissance* (1899), which was translated into Italian in 1905; *The New Criticism* (1911), *The New Hesperides and Other Poems* (1911); *Creative Criticism* (1917); *Poems* (1924); *Poetry and Religion* (1924), and *Creative Criticism and Other Essays* (1931). Also, he edited *Critical Essays of the Seventeenth Century* (3 vol., 1908-09); *Temple's Essays* (1909); *Goethe's Literary Essays* (1921), *Criticism in America* (1924), and *European Library* (25 vol., 1920-25).

SPITSBERGEN. See SVALBARD.

SPORTS. The close of the sports season of 1939, one quarter-century removed from the outbreak of the World War in 1914, left the world of athletics facing an almost exactly similar position to that which obtained 25 years earlier. World-known athletes entered the armed services of one country and another. Warfare called for men of the very types furnishing participants in many sports. The planning of sporting events ran into the uncertainties and disruptions natural to a time of conflict.

Yet 1939 was a year of great achievement, a year of near-perfection in championship form. The United States retained its international prestige in a competitive schedule that we were able to see through to the end. In almost all the fields of sport, our athletes proved their supremacy.

Archery. The 1939 Archery Championship was retained by Pat Chambers of Portland, Ore., when he made an all-time record with a score of 134-826 in the Single York Round at the tournament of the National Archery Association held in St. Paul, Minn. Chambers also won the Double York Round, score 272-1581; Single American Round, 90-700; Double American Round, 180-1398. A new champion, however, succeeded to the women's title, displacing Miss Jean Tenny who was runner-up. The 1939 title holder is Mrs. Blevia Carter of Seattle, Wash., who scored 72-466 in the Single National Round; 143-919 in the Double National Round; 72-538 in the Single Columbia Round, and 144-1066 in the Double Columbia Round.

Curtis L. Hill, Dayton, O., won the Men's Regu-

lar Style Flight Shoot championship, 517 yds. 1 ft. The Men's Free Style Flight Shoot title was won by Bruce Robertson, Milwaukee, Wisc., 536 yds. 2 ft. 8 in. The women's championships in these two events were won by Mrs. Millie Hill, Dayton, O., 374 yds. 2 ft. 5 in., and Glendolene Vinyard, Candby, Ore., 455 yds. 8 in., respectively, both women creating all-time records in these events, as did Curtis L. Hill in the Men's Regular Style F. S. event. Mrs. Beatrice Hodgson, San Pedro, Cal., created an all-time record in the Single Columbia Round, with her score of 72-552.

The annual international tournament, held at the Canadian National Exhibition in Toronto in August, was marked by the unprecedented feat of Mrs. Olive Besco-Layer of Clarendon Hills, Ill., in winning the women's senior title for the sixth successive year, the first archer, man or woman, to hold an international title over that period. Jules Schweitzer of Lakewood, Ohio, won the men's crown and Robert Goldich of Newtonville, Mass., successfully defended the boys' junior championship. The only Canadian to figure in the four major events was Miss Doreen Roberst of Toronto, who captured the girl's junior title.

Automobile Racing. Just what speed a man-driven machine on four wheels may ultimately attain seems impossible to conjecture. When Capt. George E. T. Eyston in 1938, within 24 hours after having his own record smashed by his compatriot, John R. Cobb, London fur dealer, drove his famous *Thunderbolt* for an all-time record of 357.5 m.p.h., that seemed to be the utmost limit. Last year, however, the doughty trader in pelts returned to the scene of his previous year's defeat, the Bonneville Salt Flats of Utah, and in a series of assaults against time emerged with all the unlimited and Class "A" International records tucked safely under his belt. Cobb traveled the mile on the famous straightaway track at the speed of 368.9 m.p.h. on August 23. Three days later in his same *Railton Red Lion*, he broke the 5 and 10 mile records at the rate of 302.2 m.p.h. and 270.4 m.p.h., respectively. Incidentally he was clocked for kilometer marks in each test, doing 1 k. in 369.7 m.p.h.; 5 k. in 326.7 m.p.h., and 10 k. at the rate of 283.0 m.p.h. Over the same flats in July and August, Ab Jenkins in his *Mormon-Meteor III* roared to two more world endurance-run records, which about gives him a perfect score on all distances from 100 to 1000 miles. On July 26, he traveled 500 miles in 2:55:07.12 or, 171.31 m.p.h. On August 11, Jenkins sped 1000 miles to an endurance record of 170.77 m.p.h., going the entire distance in 5:51:21.01. The Annual Memorial Day 500-mile auto classic at Indianapolis saw Wilbur Shaw repeat his '37 victory in a *Boyle Special*, completing the distance in 4:20:47.39 equalling 115.035 m.p.h., before over 145,000 spectators. Shaw bettered his previous time but failed to lower the record for this event made by Floyd Roberts when he won it in 1938 with an average speed of 117.200 m.p.h. The 1939 race was marred by the fatal accident which ended the career of Floyd Roberts when he collided with Bob Swanson as he entered the 266th mile in the first fatality on the track since 1935. Roberts had planned to retire after this event.

Badminton. The National Amateur championships held—for the first time—in New York in 1939, demonstrated that badminton is one of the most popular of winter games. Competitors assembled for the event last March 23-25, representing the East, Middle West, and Far West to the

number of nearly 200. Nor did its popularity rest solely with the participants, for the number and enthusiasm of the spectators surpassed anything in previous attendances. Champions of two years' standing, ever since the National event was inaugurated in 1937, were dethroned in both the men's and women's singles. Walter Kramer of Detroit, defending champion, yielded his crown in the men's final singles to 18-year old David Freeman, Pomona College freshman from Pasadena, Cal., in straight sets, 15-9. Miss Mary Whittemore, slender and left handed, who hails from Boston, Mass., met Miss Helen Gibson of Westport, Conn., in the women's final after the latter had eliminated Mrs. Del Barkhuff, Seattle's reigning champion since 1937, in the semi-finals 4-11, 11-6, 12-10. Miss Whittemore defeated Miss Gibson 11-1, 2-11, 11-4. H. Law and R. Yeager of Seattle successfully defended their men's doubles title; Mrs. Barkhuff and Miss Zoe Smith of Seattle regained their women's doubles crown lost last year, and Miss Smith and Yeager are the new mixed doubles titleists. Paul Vansco, New York, won the Eastern championship, with Miss Whittemore victor in the women's event, while the Metropolitan crowns went to Clinton Stephens and Miss Mary Hagan respectively, both of New York. The Eastern Intercollegiate championship enjoyed a successful inception in 1939 and was won by Albert M. Frost, Columbia senior, who defeated Francis B. Hamlin, Jr., of Yale in the final. To complete a flourishing year, a youthful American professional, Bill Markham of New York, defeated Jack Purcell, veteran star of the badminton realm, native of Toronto, Canada.

Baseball. It was fitting that the grand climax of the baseball season of 1939 should ring down the curtain upon the celebration of the 100th Anniversary of America's National game with a team record unparalleled in the annals of baseball history. And the well-deserved honor for that feat goes to the New York Yankees. Their playing throughout the entire season, up to and through the World Series, demonstrated the most perfectly co-ordinated team work and machine-like precision. It was an exhibition of achievement reaching its highest plane throughout a 100 years of progressive development. They won their fourth successive American League pennant with a margin of 17½ games, and repeated against the Cincinnati Reds the straight game victory they won in 1938 against the Chicago Cubs when the two teams met in the 1939 World Series. The scores for the series were as follows: First game, played in New York Oct. 4, 1939, attendance 58,841, Yankees 2: Reds 1. Second game, New York, October 5, attendance 59,791, Yankees 4: Reds, 0. Third game, Cincinnati, October 7, attendance 32,723, Yankees, 7: Reds 3. Fourth game, Cincinnati, October 8, attendance 32,794, Yankees 7, Reds 4. On their quest for the pennant, the Yankees were never in grave danger. Only once, with an already overwhelming lead, in mid-season they let down and lost five straight games to the Boston Red Sox, reducing their lead to 5½ games. From then on, they dominated the American League without a challenge.

In the National League it was a different story. With the collapse of the Cubs, Giants, and Pirates it looked as if the Cincinnati Reds would duplicate the Yankees' steam-roller progress. But September brought a dangerous challenge from the Cardinals, and it was not until the close of the final four-game series with the Cards that the coveted pennant came into the possession of the Reds for the

first time in 20 years and the second in the history of the World Series.

A total of seven home runs were scored in the World Series, all by the Yankees, Charlie Keller, freshman marvel, accounting for 3 (2 in the third game); Dickey 2, and Dahlgren and Di Maggio 1 each. The total attendance for the four days was 183,849; total receipts, \$745,329, and the amount received by the players was, Yankees \$5541 each, Reds \$4193 each. Capt. Bill McKechnie, the Reds' steersman, performed a miracle during his two years' handling of the team. When he took command, starting the 1938 season in last place, he had maneuvered them into the first division at its close. The close of his second season found them pennant winners. He had, however, won pennants with the Pirates in 1925 and Cardinals in 1928.

The seventh annual All-Star game between the American and National Leagues took place on July 11, 1939 in New York and was won by the American League 3-1, with six Yankee players on the team. This was their fifth victory in the entire series.

Joe Di Maggio of the Yankees won the American League batting honors with a percentage of .381 and was also voted the most valuable player. Jimmy Foxx of Boston was homerun king with a total of 35. In the National League, Bucky Walters, Cincinnati Reds, was accorded the honors as the most valuable player and was also credited with the most effective pitching record, based on his average of 2.29 earned runs per nine inning-game, with the New York Giant's veteran, Carl Hubbel, runner-up and Walter's team-mate, Paul Derringer, in third place. Johnny Mize, St. Louis Cardinals, carried off the National batting honors with a percentage of .349. Mize also won the homerun crown with a total of 28. Bob Grove, Boston, was adjudged the best pitcher in the American League, although Marius Russo and Steve Subdra were first in earned runs and won-and-lost percentages respectively.

The season was saddened by the forced retirement of Lou Gehrig, from the effects of a form of paralysis. Gehrig had achieved the remarkable record of playing 2130 consecutive games. He was retired on his own request and, on July 4, was paid a notable tribute in the Yankee Stadium by his team-mates and by Mayor La Guardia who extolled his record in the presence of 61,808 fans. The game also lost two towering figures in the passing on of Col. Jacob Ruppert (q.v.) owner of the Yankees, and Louis Comiskey, owner of the Chicago White Sox (see NECROLOGY).

The Little World Series title went to Louisville; in the American Association to Kansas City; in the International League to Jersey City, in which series the Governor's Cup was awarded to Rochester as play-off winner; in the Pacific Coast League to Seattle; in the Dixie Series to Fort Worth; in the Southern Association to Chattanooga; in the Texas League to Houston; in the Eastern League to Scranton. Harvard and Cornell were tied for the Eastern Intercollegiate League title, and Iowa captured the Western Conference crown.

During the 1939 season night baseball gained in popularity, spreading to the American League, and was supported in the National League. See ELECTRICAL ILLUMINATION.

Basketball. The 1938-39 Intercollegiate basketball season definitely proved its claim to popular appeal with record attendance figures reported from every section of the country. Competition was

not only keener than in previous years but showed marked improvement in technique, with the result that only two of last year's conference champions were able to retain their crowns. Extension of intersectional competition and an increase in the adoption of the double header method of meeting the constantly increasing spectator interest, the holding of the first National Collegiate A. A. championship, and the extraordinary record of the Long Island University five in winning the second Metropolitan Basketball Writers' Association National Invitation Tournament, were the outstanding features of the season.

The L. I. U. team, having survived a pre-season tour of seven games without a defeat, followed through with a stiff 21-game intercollegiate schedule, still unbeaten. The Loyola quintette of Chicago, also unbeaten, were selected with the L. I. U., to participate in the Metropolitan National event. Meeting in the final, L. I. U. defeated Loyola 44-32, thus winning the title as the outstanding team of the season in one of the most brilliantly spectacular series in the history of the game, drawing a total of over 50,000 spectators to Madison Square Garden.

The National Collegiate Association, after holding country-wide eliminations, held its first National Championship with Oregon, winner of the Pacific Coast Conference, meeting Ohio State, holding the Big Ten laurels. Oregon took the crown with a score of 46-33, their title, however, being subordinated to that of Long Island University.

The two quintettes that successfully defended titles won last year were Dartmouth, who defeated Harvard for the Eastern Intercollegiate League crown, and Rhode Island, winner of the New England Conference championship, with Connecticut a close runner-up.

The other Conference champions were: Ohio State which won in a flaming race with Indiana for first place in the Western Conference; Alabama which took the Southeastern Conference title with a five-game margin over Georgia; Wake Forest, winner of the Southern Conference crown with a seven-game margin over Washington and Lee which tied with Maryland for second place; Texas, winner by a one-game margin over Arkansas in the Southwest Conference; Missouri and Oklahoma tied for honors in the Missouri Valley Conference (Big Six), and Drake and Oklahoma did the same in the other Missouri Valley Conference. After Carnegie Tech and Georgetown tied for first place in the seven-year-old Eastern Conference, that body was dissolved. Colorado University won the title in the Rocky Mountain (Big Seven) Conference. Oregon won the Northern Division of the Pacific Coast Conference, and California took the Southern Division lead, but in the Divisional Play-off, Oregon defeated California 54-49 and 53-47. New Mexico State was the winner of the Border Conference, and in the Southern and Southeastern Conference tournaments Clemson and Kentucky were the respective winners.

The only claimant for national high scoring honors was Chet Jaworski of Rhode Island with 477 points, quite a drop from the all-time record of 1550 points made by Louissetti of Stanford last year. This fact may be significant of the higher plane of the past season's technique when coupled with the facts that with only two exceptions, championship crowns changed heads throughout the entire country, and Temple, the all-powerful quintette of 1938, could do no better than finish the season in the Eastern League in fifth place. At-

tendance rose to new high records throughout all the circuits. The series of 14 double headers at Madison Square drew a total attendance of 196,595. The total for 12 double headers in Convention Hall, Philadelphia, was 63,000, and in the mid-West, Minnesota and Ohio State drew a record gate of 15,700 in Minneapolis.

Billiards. In a decidedly "off-year" the only tournament of National scope held in 1939 was won by Joe Chamaco of Mexico City in the three-cushion billiard championship held under the auspices of the National Billiard Association; it lasted over four months, on a round-robin basis, held in eight cities. Chamaco, who represented New York, won fifty-five out of seventy-two games with a percentage of .762, Jay Bozeman of Chicago, pressing him closely with .667, was runner-up. Allan Hall, also of Chicago, was third with .583. The rest of the players included John Layton, Frank Scoville, Tiff Denton, Charles McCourt, Clarence Jackson, Otto Reiselt, and Art Thurnblad. With no tournaments in the other branches of the game, the present title holders are, Welker Cochran 18.2 balkline champion; Willie Hoppe, the 18.1 and 71.2 king, and Jake Schaefer, the 28.2 ruler, who retain their crowns.

No tournaments were held in the pocket billiard realm; hence, Jimmy Caras of Wilmington, Delaware, held his possession of the title. The same condition obtains in the amateur division.

Bobsledding. Named No. 1 pilot for the American Olympic Team, Robert Linney, of Lyon Mountain, N. Y., was the outstanding bobsled driver in 1939. With his mates, William J. Stacawitch, Arthur Keysor, and Angus W. Clair, he won first place in the Olympic Tryouts and then captured the North American Four-man Championship at Lake Placid, driving an all-metal sled, the *Iron Clipper*, designed and built by himself. Aubrey "Bucky" Wells of Keene Valley A. C., N. H., outstanding pilot of 1938, retained the National A.A.U. four-man championship with his team-mates, Warren Martin, Hubert Nye, and John Otis. Both the North American and National A.A.U. two-man titles were successfully defended by that famous Keene Valley pair, Ivan Brown and A. M. Washbond who won the 1936 two-man Olympic title. The Governor Lehman, Leithgow Osborne, and Samuel H. Packer four-man trophies were won by Francis Tyler's team representing the Sno Birds of Lake Placid. The International four-man championship was won by Switzerland, at Cortina d'Ampezzo, Italy, in January, 1939, with Great Britain second, Germany third and fourth, and the United States fifth.

Bowling. From March 9 to May 5, over 23,000 bowlers competed for a share of the \$184,849 total prize money during the 39th American Bowling Congress held in Cleveland, the second longest and one of the largest tournaments in the history of the A.B.C. A former baseball player, Joe Wilman, of Chicago, annexed premier honors when he won the all-event title with a total score of 2028 and cashed in with the highest money-score, his winnings approximating \$600. James Danek of Forest Park, Ill., won the singles crown with a score of 730, while the doubles diadem went to Murray Fowler and Phil Icuss of Steubenville, O., their combined score being 1405. The victorious five-man team comprized Fred Breckle, Charles Kotarski, Louis Burr, Leonard Dettloff, and John Crimmins, representing the Fife Electric Company, with a total of 3151; Solvay (N. Y.) Bank team second, with 3075, and Elizabeth (N. J.) Elks

third with 3066. William McGeorge of Kent, Ohio, rolled the only perfect game of 300 throughout the entire tournament. The 1940 A.B.C. will be held in Detroit.

The intercollegiate title was won by a Syracuse University team comprising Barney Evans and Bill Hofner, of Rochester, who set a world's doubles mark of 1517 in November. Another outstanding achievement was that of Albert Brandt, of Lockport, N. Y., who created another world's record when he bowled a total of 886 for three games.

The Women's 22nd International Bowling Congress was held in Oklahoma City, and, as in the men's event, the honors went to the mid-west. Miss Ruth Troy of Dayton, Ohio, won the women's all-around title with a total of 1724. Miss Helen Hergstler of Detroit took the singles crown with a score of 626, and Miss Connie Powers and Miss Bobby Reus of Grand Rapids, Mich., scored 1130 to capture the doubles title. The team winner was the Kornitz Pure Oil quintette which accounted for 2618 pins to annex the championship. Syracuse, New York, was selected by the ladies for their 1940 W.I.B.C.

Boxing. If the past season is a criterion, the "million-dollar-gate" has taken an indefinite vacation as far as the prize ring is concerned. In four defenses of the heavy-weight title during 1939, the total gate receipts fell under the seven figure mark. The present champion, however, deserves particular credit for his willingness to defend the title won in his fourth fight in June, 1937. He defended it in the following August, in three bouts in 1938, and four times in the past season, and, in both his 1938 and 1939 campaigns, he won all by the K.O. route.

In January, Louis met John Henry Lewis who had abandoned his light-heavyweight title to crash the heavyweight sanctum. Louis disposed of him in 2:29 of the first round. Three months later, he served Jack Roper with the same dose, but in nine seconds less time in a one round contest. In June, Louis came nearer to losing his crown than at any time since his first bout with Max Schmeling. It was only the absolute ignorance of any semblance of science or ring generalship on the part of his opponent that saved the champion from a knockout. This was his meeting with "Two-Ton" Tony Galento, who he "bombed" into helplessness in 2:29 of the fourth round. The ponderous Italian bar-keep, who knows nothing of fear and less of the art of boxing, by introducing a peculiar "stance" which permitted him to lift a punch from the floor up, had Louis staggering with the fury of his blows in the first round and spilled the champion to the canvas with a left hook to the jaw in the third session. Unable to follow up his advantage in either case, and unable to defend himself when Louis, who was clearly puzzled by the style of attack, found an opening, Galento, bruised and bleeding, his senses numbed by the Bomber's merciless hammering, proved to be little else than a punching bag from then on to the finale.

In September Louis entered the ring in Detroit, for his final championship bout of the year with Bob Pastor as his opponent whom he succeeded in knocking out in 38 seconds of the 11th round—the longest bout in his career in which he won by this route. Once before he won by a K.O. in the 10th round, in 1935 against Hans Birkie.

Next to Joe Louis, the name of Billy Conn of Pittsburgh stands out pre-eminently among the season's stars. Defeating Apostoli the second time,

Conn won the light heavyweight title from Melio Bettina of Beacon, N. Y., in a fifteen round decision at Madison Square in July. Bettina came by the title in defeating Tiger Jack Fox in an elimination final in February, 1939. The new light heavyweight champion is, at present, the most promising candidate for heavyweight possibilities.

Armstrong lost much of the glamor attached to his 1938 performances when he dropped the lightweight crown through questionable tactics in his bout with Lou Ambers, who was awarded the title—a decision, however, which brought much criticism—but he successfully defended his welterweight crown in eleven title bouts. The middleweight crown is shared by two heads, Al Hostak reigning with the recognition of the N.B.A. on his four round knockout of Solly Krieger, while Ceferino Garcia disputes his right to the title upon his own recognition by California and New York through his sensational knockout of Fred Apostoli. Joey Archibald retained his featherweight championship by defeating Leo Rodak and Henry Jeffra, and Sixto Escobar successfully defended his bantamweight title against Kayo Morgan in April, but subsequently relinquished the crown. This leaves the bantamweight title in dispute between Georgie Pace, Cleveland, recognized by the N.B.A., and Lou Salica, New York, recognized by the New York Boxing Writers' Association. In the flyweight class Little Dado, Philippine Islands, has the recognition of the N.B.A. and the N.Y.B.W.A. In neither of the latter classes does the New York State Boxing Commission recognize any champion.

In the amateur class the National A.A.U. champions are as follows: 112-lb. Class, Jose Mercado, Honolulu; 118-lb. Class, Willima Speary, Philadelphia; 126-lb. Class, William Eddy, Flint, Mich.; 135-lb. Class, George Toy, Cleveland; 147-lb. Class, Cozy Etorace, Rome, N. Y.; 160-lb. Class, Ezzard Charles, Cincinnati; 175-lb. Class, James Reeves, Cleveland; Heavyweight, Tony Novak, Chicago. The National Collegiate A. A. Champions include: 120-lb. Class, Sewele Whitney, Loyola; 127-lb. Class, Ted Kara, Idaho; 135-lb. Class, Gene Rankin, Wisconsin; 145-lb. Class, Omar Crocker, Wisconsin; 155-lb. Class, Woodrow Swancutt, Wisconsin; 165-lb. Class, Frederick Stant, Catholic U.; 175-lb. Class, Truman Togerson, Wisconsin; Heavyweight, Rene Trochesset, Louisiana State. In the Eastern Intercollegiate Championships, Army won team honors and won the 120, 145, and 155-lb. events; Syracuse took the 165 and 175-lb. titles; Cornell won the 127-lb. and heavyweight crowns, and Penn State scored in the 135-lb. Class.

Checkers. Two National organizations controlling the checker players of the country focused the attention of devotees of the game upon Flint, Michigan, where the annual meeting of the old American Checker Association was held, and Tacoma, Wash., which was the scene of the National Checker League's gathering. Running true to expectations, Asa Long of Toledo, who has claims to the World Championship, won the A.C.A. tournament at Flint. In Tacoma, Willie Ryan of New York won the title of the N.C.L.

Chess. World interest in chess centered upon the achievements of Sako Flohr, Czechoslovakian wizard, who, early in the season, definitely re-established his premier position.

In three European contests, Flohr demonstrated his superiority, his first triumph occurring in the great tournament which started in Leningrad and ended in Moscow. Lohr won first prize with the

score of 12-5, just $1\frac{1}{2}$ points ahead of the United States champion, Samuel Reshevsky, runner-up. Again at Margate, England, Flohr was in excellent form when he scored $6\frac{1}{2}$ - $2\frac{1}{2}$ as runner-up to Paul Keres, Estonia, who captured first prize. Flohr shared second and third prize with Jose R. Capablanca of Cuba.

The advent of war in Europe changed the scene of action for the International Chess Federation to Buenos Aires. Due to its contention that \$1500 offered for expenses was insufficient, the United States team, hitherto invincible, failed to attend the meeting in defense of the Hamilton-Russell trophy which, as a result, was won by the German team, attending for the first time, and whose total score was 36-20. In a close finish, Poland was second with $35\frac{1}{2}$ - $20\frac{1}{2}$; Estonia $33\frac{1}{2}$ - $22\frac{1}{2}$; Sweden 33-23; Argentina $32\frac{1}{2}$ - $23\frac{1}{2}$; Moravia-Bohemia 32-24; Latvia $31\frac{1}{2}$ - $24\frac{1}{2}$, and Holland $30\frac{1}{2}$ - $25\frac{1}{2}$. Palestine, France, Cuba, Lithuania, Chile, Brazil, and Denmark completed the competitors, finishing in that order. Eleven countries, eliminated after the preliminary round, participated in a consolation tournament for the President of Argentina Cup, Iceland and Canada tying for first place with 28 points each. Iceland, however, having a victory of $2\frac{1}{2}$ - $1\frac{1}{2}$ over Canada, was declared the winner.

In the women's tournament of the International event, Mrs. Vera Menchik Stevenson, London, retained her world's championship which she has held ever since the inception of this event, scoring 18 out of 19 points, Sonja Graf of England being runner-up with 16 points.

Jose Capablanca scored the highest percentage. Playing for Cuba without losing a game he made 77.04 per cent of all those playing at the first board for their respective nations. Representing France, Dr. Alexander Alekhine scored 75 per cent.

The most important event in American chess activities was the final amalgamation of the National Chess Federation, U.S.A., and the American Chess Federation into one National unit, the United States of America Chess Federation, George Sturgis, President, with headquarters in Boston, and Ernest Olfe, Secretary, in Milwaukee. Under these new auspices, the annual championship tournament, held in New York, was won by Reuben Fine, New York, with Samuel Reshevsky, the official champion of the United States, runner-up, with scores of $10\frac{1}{2}$ - $\frac{1}{2}$ and 10-1 respectively. The Women's championship ended in a triple tie between Mrs. Mary Bain, Astoria; Mrs. N. M. Karff, Boston, and Dr. Helen Weisenstein, New York.

The Intercollegiate Chess championship was won by City College ('Varsity) $16\frac{1}{2}$ - $3\frac{1}{2}$. Walter P. Stockman, Harvard '40, won the individual Intercollegiate title after a tie with Stephen P. Diliberto, Princeton '42. Harvard won the H.Y.P.D. College Chess League championship, with Yale second, Princeton third, and Dartmouth, fourth.

Contract Bridge. Two outstanding events occurred during 1939 which created all time records so far established in contract-bridge championship play. At Pittsburgh, in December, Mrs. Ralph C. Young, Charles H. Goren, John R. Crawford, and Charles J. Solomon won the National team-of-four championships for the third consecutive time, having captured the title in 1938 and 1937, the first time any team of four has achieved this feat. Mrs. Ralph C. Young won more National championships than any other player, man or woman, during 1939.

The Masters Individual was won by M. D.

Maier, with Alvin Landy, second, and Myron Fuchs, third. In the Summer Nationals, the Masters Pairs was won by Harry Fishbein and Robert Appleyard; Masters Teams by Oswald Jacoby, T. A. Lightner, M. D. Maier, Howard Schenken, and Robert McPherran; Mixed Teams by Florence Stratford, Alvin Landy, Mrs. Valerie Klein, and Robert Chatkin; Amateur Teams by Mrs. Fred Horn, Mrs. Gussie Pianco, Mrs. Mabel Ervin, Mrs. Valerie Klein; Men's Pairs by Oswald Jacoby, John R. Crawford; Women's Pairs by Mrs. A. M. Soble, Mrs. R. C. Young; President's Pairs by Mr. and Mrs. Herbert D. Lent.

In the Eastern Championships, Fred D. Kaplan and Harold Ziman were victors in the Open Pairs; Charles Lochridge, Travers LeGros, S. G. Churchill, John Rau, and Sam Fry, Jr., won the Open Teams; Mrs. M. D. Rothschild and Mrs. Robert Fuller won the Women's Pairs; Mr. and Mrs. James H. Lemon and Dr. and Mrs. L. W. Lord won the Mixed Doubles, and the Non-Masters Pairs title went to Ralph Hirshberg and Charles H. Sanders.

Court Games. Court Tennis. Ogden Phipps of New York came back to end the brief reign of James H. Van Alen, Newport, in the realm of court tennis with a crushing defeat for the 1939 title. Unable to compete in 1938 through an injury, the veteran champion won his fifth claim to the crown when, in the finals of the annual tournament held at Boston in March, he overwhelmed Van Alen with his terrific "railroad" service and powerful stroking in sequence sets, 6-2, 6-2, 6-2. Upon his return to championship competition earlier in the year, Phipps vanquished Van Alen in the final of the famous Tuxedo Gold Racquet tournament. Paired with William Rand, Phipps also won the National doubles title. Pierre Etchebaster retained his World's and National Professional championship crown without the necessity of defending it.

Racquets. Qualifying to challenge for the World's championship in 1940, Robert Grant III of New York won his third amateur title in racquets, retained his Tuxedo Gold Racquet Title and the Canadian crown and, with Clarence Pell, Jr., also of New York, successfully defended the American and Canadian doubles championships. Grant swept through the amateur ranks without the loss of a single game, defeating J. R. Leonard in the final. As a climax to his 1939 achievements he entered the National open event, wresting the title from Norbert Setzler in a crushing final that netted the professional of the Racquet and Tennis Club only three points in the final game, the score being 11-15, 15-12, 15-7, 15-5, 15-3. Setzler had previously defeated Kenneth Chantler of Montreal. Grant's latest campaign established him on a par with the late Jay Gould as the greatest master of the game in present competition.

Squash Racquets. Germain Glidden's retirement, undefeated, from his 3-year reign in the realm of squash racquets found Donald Strachan of Philadelphia regaining the title he won in 1935. Strachan's return was accomplished by his defeat of the ambidextrous Stanley Galowin, New York, when they met in the final of the 1939 National championships in Chicago in February. Galowin, who had won the New York State title, was no match for the Philadelphian who won in three straight games. Hunter H. Lott and William S. Slack of Philadelphia, retained their National doubles crown, defeating Galowin and Fred Alexander of New York in the final.

Princeton won the Intercollegiate title when Stanley Person defeated Kim Canavarrro of Harvard.

Miss Anne Page, Philadelphia, won the women's title for the third time, having held it in 1936 and 1937. She defeated her fellow townswoman, Miss Elizabeth Pearson. The women's team, however, failed in London in competition with the British women's team in the Wolfe-Noel Cup Series. The British team won 5-0.

Squash Tennis. In the 1939 squash tennis competition, Harry Francis Wolf added to his unparalleled record by retaining the National title for the tenth successive year without losing a match. Prior to his advent, the title had never been held longer than four years. Wolf also led the New York A. C. team to victory in the Class A inter-club matches which they had won in 1937. The Clyde Martin memorial and Princeton invitation tournaments also succumbed to his prowess. Walter Hoag of the Yale Club won the metropolitan veteran's crown, and Bob Reeve of Bay-side annexed both the National Class B and Class C championships.

Cricket. Cricket honors in the United States went to Philadelphia when the Philadelphia Electric Cricket Team, defeating Union County, won the United States Cricket Association cup. But the Quaker City team, which won the Metropolitan District championship in 1938, went down to third place in this year's competition. In a visit to Rochester and Canada, they won seven with two matches drawn in a series of nine. The Metropolitan District Championship was regained by Brooklyn after completing a schedule of fourteen championship matches in which they won 9, lost 1, and had 4 drawn. In a tour of Montreal and Ottawa, they played five matches, won 2, lost 2, and had one drawn.

In England, the County Championship was won by Yorkshire, and Oxford won the annual match with Cambridge. In three test games played by England against the West Indies England won 1 and the remaining 2 were drawn. In a test game in South Africa, England scored 648 runs for 5 wickets, a record score in a fourth inning. After their English series, the West Indian Team visited Canada, playing one match in Montreal, which they won. The Bermuda Overseas (colored) team in a visit to New York, played a series of eight games, winning 3, losing 1 and had 4 drawn.

J. B. Hobbs created a record by scoring 197 centuries in first-class cricket. With the addition of 43 scored in minor games, his total was augmented to 240.

Cross-Country Running. The National A. A. U. harrier championship, run on November 19, 1939 over the Branch Brook Park course, Newark, N. J., was won for the sixth consecutive time by the veteran Don Lash who thus broke the record established by Willie Ritola who had held the title for five consecutive years. Lash, without preparation, not having participated in any events since June, clipped 11 seconds from his own record, covering the 10,000 meters (6¼ miles) in 32:26. Millrose A. C., New York, retained the team championship, barely nosing out the New York A. C. by two points.

The National Collegiate A. A. championship, a new addition to the cross-country schedule, was won by Walter Mehl, University of Wisconsin, who annexed both the National and Central titles at East Lansing, Mich., when he negotiated the four-mile course in 20:30.9. Mehl also won the

Western Conference title a week previously at Chicago, November 20.

A New York U. sophomore, Leslie MacMitchell, captured the Intercollegiate A.A.A.A. championship on November 21, over the Van Cortland Park course, covering the five miles in 26:28.6. Manhattan College won the team championship.

Frank ("Pat") Dengis retained the National A.A.U. Marathon title at Yonkers, New York, running the 26 miles 385 yards in 2:33:45.2, a record for that course. Dengis also won the Lawrence Marathon at Salisbury Beach, Md., in 2:32:54.1 and the Laurel event at Baltimore, Md., in 2:44:30.6. The Boston Marathon, over the same distance, was won by Ellison Brown in 2:28:51.8, lowering the course record by 2:9.8 and the Olympic record by 27.4.

Curling. The Gordon International Medal, regained by the United States in 1938, was successfully defended by our curlers at Utica, scene of the international competition, when they defeated the Canadians 238-164. Accustomed to heavier stones and slower ice, the invaders were able to win only three matches, one ending in a tie. The No. 1 rink, playing for the Country Club of Brookline, took the high scoring honors for the United States.

The Schenectady Curling Club won the Gordon Grand National Medal, defeating the defenders from Utica 13-12 in the final. The Patterson Medal was captured by the Saranac Lake Curling Club for the seventh time, and the Stockton Cup went to a Utica rink captained by A. Gleason.

Cycling. Due to the European war, bicycle racing was confined chiefly to the United States and enjoyed country-wide popularity. Only two World titles were competed for and both went to the Netherlands. These were the amateur and professional sprint championships, in which Jan Derkens displaced his fellow Hollander, Jan van der Vliet for the amateur crown, and Arie Van Vliet retained his professional laurels by default. Riding in the final heat against Josef Scherens, six-time title-holder from whom he won the championship in 1938, the pair collided and Scherens was so badly injured that he was unable to continue. Howard Rupprecht of Maplewood, N. J., won the National amateur sprint title; Robert Stauffacher of San Francisco captured the National A.A.U. senior crown, and Eddie Carafagnini annexed the National Cycling Association senior title. Tino Riboli won the National professional motor-paced event.

The six-day schedule was seriously curtailed. Kilian and Vopel, great German pair had won the Milwaukee and San Francisco events, and Kilian with Bobby Thomas won the Chicago and Buffalo grinds before their call to the colors compelled them to sail for home. Other foreign stars also had been called home, with the result that the big event in December at Madison Square Garden in December was reduced to five days. It was won by Moretti and Yates with 2089 miles and 1058 points to their credit. The six-day event last May at the Gardens was won by W. and D. Peden who rode 2388.9 miles and totaled 1498 points.

Dogs. The realm of dogdom was again dominated by an imported entry when the decision of the judges at the Westminster Indoor Bench Show at Madison Square, awarded highest honors to Mrs. M. Hartley Dodge's Doberman pinscher, Champion Ferry von Raufhelsen of Giralda, as the best dog in the show. Westminster was

Ferry's first show and, instead of retiring him, as was the custom in former years, McClure Halley campaigned him against the best in the entire country. In thirteen finals, he won first honors in twelve. With this record, Ferry is easily the outstanding dog of the year. No runner-up was named, but the highly prized award for the best American-bred dog of the show went to Herman Mellenthin's cocker spaniel, Champion My Own Brucie, winner of the Morris and Essex Outdoor Bench show. Mrs. William DuPont's beagle, Champion Meadowlark Draftsman, took the \$200 prize for the most credits won. The best brace in the show were the litter brother and sister, white standard poodles, Champions Blakeen Jung Frau and Champions Blakeen Eiger, owned by Blakeen Kennels and shown by Mrs. Sherman R. Hoyt. The team prize went to the Sealyham terriers, Belle Dorothy, Champion Croglin Christina, Champion Nutfield Snowfall, and Champion Brash Best Man of Croglin, owned by the Croglin Kennels.

In the field trial class, first honors in the spaniel division were won by James Simpson, Jr.'s. F. T. champion Solo Event, and in the retriever division by Paul Blakewell III's Golden retriever, F. T. champion Rip. L. M. Bobbitt's English setter, Sports Peerless Pride, won the bird dogs' award of the National Championships at Grand Junction, Tenn.

Fencing. Fencing laurels during 1939 remained in the East, with Navy predominating in the Intercollegiates by winning five of the seven events. For the first time, the championships of the Amateur Fencers League of America was held on the Pacific Coast, in San Francisco. The long rivalry for sabre honors between Dr. John R. Huffman of the New York A. C., who, in 1938, won the individual championship for the fifth time, and Norman C. Armitage of the Fencers Club, saw the tables turned in San Francisco when Armitage wrested the crown from his adversary 5-4. Huffman also suffered the loss of his three-weapon title to Jose R. de Capriles of the Salle Santelli. An exceptionally close contest for the foils crown ended with a surprise when young Norman Lewis, of the Salle Santelli, former New York University star, came through the three-way tie to victory. Another upset was the unexpected feat of Loyal Tingley of the University of Chicago who fought his way through the field of experienced national and international veterans to become the second undergraduate to win a National title, taking first honors with the épée. Norman C. Armitage added the outdoor sabre crown to his laurels, and Tracey Jaekel won the outdoor épée event, which had to be conducted indoors on account of inclement weather.

Salle Santelli won the National Foils team title and also the three-weapon team crown. The sabre team title was retained by the New York A. C., and the épée team laurels were captured by the Fencers Club. The three National Junior titles went to Ralph Marson, New York A. C., foils; Alfred Skrobisch, Fencers Club, épée, and Anthony Hyde, Philadelphia Sword Club, sabre.

The National Women's individual title was retained by Miss Helene Meyer of Oakland, Calif., while the team honors went to the Salle d'Armes Vince. Miss Helena Mrockowska of Hofstra College won the Women's Intercollegiate individual title, and Hofstra College won the team championship. The National Women's Junior laurels went to Miss Mildred Stewart, Salle Santelli.

The Intercollegiate results were as follows: Individual: foil, Vincent De Poix, Navy; épée, Salvatore Manzo, Army; sabre, Abraham Campo, Navy. Teams: foil, Navy; épée, retained by Navy; sabre, Columbia; three-weapon team, Navy. The preponderance of Navy supremacy was unprecedented in the 46 years of the Intercollegiate competition.

Football. College football showed no decrease in its popular appeal; in fact, attendance as a whole throughout the country showed an increase and records in the South were repeatedly broken. On the other hand, the professional game proved the fastest growing sport on the calendar, the National Football League games drawing a total of 1,312,611 fans. This would indicate that the two games, vastly different in intimate interest, are unlikely to interfere with each others' popularity. The close of the 1939 college football season found five teams of outstanding merit, each unbeaten, Texas A. and M., Tennessee, Cornell, Southern California, and Tulane.

Texas A. and M. was supreme in the Southwestern Conference; Cornell was recognized as retaining unofficial championship of teams in the East; Southern California again annexed the Pacific Coast laurels; Tennessee and Tulane shared the Southeastern with Georgia Tech., (Tennessee retaining its title). The remaining title holders were Ohio State in the Big Ten, Missouri in the Big Six, Duke retained its title in sharing the Southern Conference leadership with Clemson, while Colorado University led the Big Seven.

Cornell, after its best season since 1923, refused all offers for a post-season game. The teams scheduled to meet in the New Year's Day "Bowl" contests were: Rose Bowl, Tennessee and Southern California; Sugar Bowl, Texas A. and M., and Tulane; Orange Bowl, Missouri and Georgia Tech.; Cotton Bowl, Clemson and Boston College.

It is generally agreed that Nile Kinnick, brilliant Iowa back, was the year's greatest player, and that the coach of the year was Dr. Eddie Anderson serving his first year at Iowa City. Two other first year coaches, Buff Donelli of Duquesne and Frank Leahy of Boston College, deserve special mention. A surprise of the year was the dropping of intercollegiate football by the University of Chicago, formerly a power in the Big Ten, whose 1939 team was defeated in all but two of the eight games on its schedule.

Southern California and U.C.L.A. played to the year's largest gallery in Los Angeles, 103,000, and the Army-Navy game, which was won by the midshipmen 10-0, under the most inclement weather conditions, drew a gate totaling 102,000 enthusiasts at the Philadelphia Municipal Stadium. The post-season games played on New Year's Day 1939 resulted as follows: Rose Bowl (Pasadena, Calif.): Southern California 7, Duke 3, attendance, 91,000; Sugar Bowl (New Orleans, La.): Texas Christian 15, Carnegie Tech. 7, attendance 50,000; Orange Bowl (Miami, Fla.): Tennessee 17, Oklahoma 0, attendance, 32,191; Sun Bowl (El Paso, Tex.): Utah 26, New Mexico 0, attendance 13,500; Cotton Bowl (Dallas, Tex.): St. Mary's 20, Texas Tech. 13, attendance 40,000.

In the professional ranks, the New York Giants won first place in the Eastern Division of the National League, losing only one game out of ten played. The Green Bay Packers led the Western Division with 8 games won and 2 lost. The play-off between the Giants and the Packers was held

in Milwaukee, the Green Bay eleven exhibiting a perfection of gridiron skill that swamped the New York gridders with a 27-0 rout, the worst defeat in the annals of the play-offs. Don Hutson was Green Bay's star performer, setting three league records for pass-catching during the season, two of which were life-time marks for number of aeriels received and yardage gained on forwards. As a decoy he was equally effective. A total of 13 individual records were made and 14 team marks blasted, a sweep of statistics unprecedented. Davey O'Brien of Texas Christian, playing for the Philadelphia Eagles, and Parker Hall of Mississippi, playing for Cleveland, both freshmen in the professional ranks, proved heavy contributors in outstanding achievements, their forward passing virtually sweeping the records clean. Bill Osmanski of Holy Cross was the leading ground-gainer in the league, playing for the Chicago Bears. All-time record attendance occurred in five cities, Detroit leading with 48,492, Washington 36,183, Brooklyn 34,032, Philadelphia 33,258, Cleveland 30,691, while in New York the total attendance for six home games reached 232,440, the Giant-Redskin fracas drawing 62,543 with the Polo Grounds sold out four days prior to the game. The financial returns exceeded any previous season and all the clubs made money.

In the American League, the race for supremacy in the Southern Division was a thriller, New York's Bears and the Wilmington Clippers closing the season in a tie that necessitated a play-off which ended in a Bear victory. Paterson's Panthers won the Northern Division championship. In this play-off for the Association title and the Leonard Grant Memorial trophy, the Bears were again successful.

Golf. From an international standpoint, golf had an off-year during 1939. The abandonment of the Ryder Cup match due to the war, and the lack of Walker or Curtis Cup matches in the season of 1939, left but little incentive for a United States invasion of Europe. In the home and Canadian major tournaments it was decidedly an off-year for champions, not a single one of whom retained his or her title. The United States National Open championship, played over the links of the Philadelphia Country Club, in which 27-year old Byron Nelson, Reading, Pa., professional and former Texan, finally won in a three-way play-off, was the outstanding event of the year. After Sam Snead of White Sulphur Springs, W. Va., and Marvin Ward, promising amateur from Spokane, Wash., blew up in the final round and ended fifth and fourth respectively, Nelson, Denny Shute, and Craig Wood tied with a 284. The first play-off found Nelson and Wood still tied, Shute being eliminated. In the final the next day Wood, needing only two to get down from off the green, took three, chipped eight feet past the hole and left himself a good ten inches short on the next, while Nelson dropped a ten-foot putt for his 4. Ward's flubbing cost him the opportunity to tie Bobby Jones' 1930 double win, for, later in the season, he defeated Ray Billows 7 and 5 on the North Shore course at Chicago, to win the final in the National amateur tourney.

The Professional title was won by Henry Picard, Hershey, Pa., in his first major victory. He defeated Nelson, newly crowned Open champion, one up, over the links of the Pomonoc Club. Picard also won the Metropolitan Open. Andy Szwedko, brawny Pittsburgh steel worker, annexed the U.S. Public Links crown, while Los

Angeles retained the team title. Nelson can justly claim to be the outstanding professional player of the year since, in addition to his three-way triumph in the National Open, he moved on to the Western Open and lifted the crown that had rested on Guldahl's brow for the last three years in succession.

With Miss Patty Berg unable to defend her title, due to an operation, the choice of favorites to win the Women's National amateur championship lay between Miss Pam Barton, British champion, and Mrs. Estelle Lawson Page of Chapel Hill, N. C., 1937 titlist and runner-up to Miss Berg in 1938. Both suffered upsets, however, and a 20-year old Texas lass, Miss Jameson, who won the Southern crown when she was 15 years old, came through to victory by beating a sister star from the South, Miss Dorothy Kirby of Atlanta, 3 and 2, over a wet and soggy Wee Burn course. Playing her first National championship test, 18-year old Betty Hicks of Oakland, Calif., reached the semi-finals, and in the qualifying round, Miss Beatrice Barrett established a championship record of 74.

The British championships were scheduled early enough not to be affected by the war, but not early enough to entirely escape the threat of American victory. In the British Open, Johnny Bulla of Chicago, with a score of 292, lost by just two strokes when a member of the 1935 British Ryder Cup Team, Dick Burton, turned in the winning score of 290. With Richard A. Chapman of Greenwich, Conn. (who won the French amateur title), and W. H. Holt of Syracuse, reaching to quarter and semi-finals respectively, the British Amateur crown found a Scotsman, Alexander Kyle, and a Welshman, Andrew Duncan, vying for its possession. The Scotsman won 2 and 1. Miss Pam Barton of England won the British Women's championship, repeating her 1936 victory.

The Canadian Amateur honors were garnered by Ken Black of Vancouver, B. C., while Harold McSpaden, Winchester, Mass., brought the Canadian Open title over the border, with Ralph Guldahl, runner-up, five strokes behind. The Duke of Devonshire Trophy was won by the United States.

The National Intercollegiate Championship was won by Vincent D'Antoni of Tulane University, and the team title went to Leland Stanford University. The Western Intercollegiate Conference crown was won by Chase Fennon, Northwestern U., and the team championship went to the same university. Princeton led the Southern Division of the Eastern Intercollegiate League in a play-off match, and the Northern Division went to Dartmouth in a double play-off finish with Yale, runner-up, as a result of a play-off match.

Ralph Guldahl, with a record breaking 279, won the Masters tournament. The U.S. Senior title was won by C. H. Jennings of Roaring Gap, N. C., and the North American Senior by William A. Ryan of Detroit. Mrs. E. L. Howe, Merion C. C., won the Women's National Senior, and Mrs. Harry McNaughton won the Metropolitan Women's championships. The Griscom Cup went to New York. Frank Strafacci, Lido C. C., retained his Metropolitan Amateur laurels, and Gene Sarazen captured the Metropolitan Professional.

Gymnastics. In the National A.A.U. Gymnastic Championships held at Annapolis, Md., the All-round title was won by George Wheeler, 24-

year old Washington, Pa., teacher for the third successive year. Wheeler was first in calisthenics, long horse, side horse, and parallel bars. He lost his title in the horizontal bars to Chester Phillips of Philadelphia, however, himself taking third place. The other individual winners included Joe Goldenberg, Normal College, Indianapolis, flying rings; E. A. Hennig, Cleveland, Indian clubs; Joe Gialombardo, University of Illinois, tumbling; Stanley Ellison, Navy, rope climb, in which he established a world record by negotiating the 25-foot distance in five seconds. The team title was retained by the Swiss Turnverein of Hudson County.

Miss Margaret Weissmann, New York, retained the all-round lead in the Women's National event held in Pittsburgh, while the individual titlists were Andrea J. Barbustiak, Pittsburgh, calisthenics, side horse and flying rings; Helen Schifano, Newark, N. J., parallel bars; Vera Tipawitz, Philadelphia, tumbling.

The University of Illinois won the National Collegiate A.A. tournament, defeating Army whose cadets had won the all-round and individual titles in the Eastern Intercollegiate championships.

Handball. There was little change in the National handball competition in 1939. Joe Platak of Chicago won the senior four-wall singles title for the fifth successive year, repeating his 1938 victory—less easily, however—over Jack Clements of San Francisco. The New York A. C. doubles pair, Ed. Linz and Frank Coyle, retained their title, also winning the New York State crown. In the National Singles, one-wall event, Harry Michitsch, Trinity Club, defeated the 1938 title-holder Joe Garber, who holds the Metropolitan one-wall title. Harry Goldstein and George Baskin, Trinity Club, also Metropolitan doubles titlists, retained their National one-wall doubles championship.

Hockey. The Stanley Cup, emblematic of World supremacy in ice hockey, was won by the Boston Bruins when they defeated the Toronto Maple Leafs in April, 4-1. Finishing their regular schedule in the National Hockey League race in first place, with the New York Rangers trailing in second, the Boston skaters' ultimate victory came as an anti-climax to the series of seven matches in their post-season play-off, in which the Rangers thrilled with a come-back which almost changed the outcome. Unsuccessful in their scheduled matches with the Bruins, the New York team was brushed aside in whirlwind fashion in the first three matches of the play-off, two of them in overtime play, but, to the consternation of the Bostonians, the Rangers came back to win the next three. The seventh and deciding session was played in Boston Garden amid tense excitement, also going into overtime play before the Bruins were able to score the final goal with a 3-2 victory. The 1938-39 season operated with only seven teams in the loop, only one of which was eliminated from participation in the play-offs, the Chicago Black Hawks who had won the Stanley Cup the preceding year. The point standing of the teams at the close of the season was: Boston Bruins 76, New York Rangers 58, Toronto Maple Leafs 47, New York Americans 44, Detroit 42, and Les Canadiens 39. Mel Hill of the Bruins scored all the deciding goals in the overtime matches in the play-off series.

A team of Canadian skaters, the Trail (B.C.) Smoke Eaters, finished first in a tournament held in Basle, Switzerland, and won the World amateur championship. The United States was second.

The Allan Cup, symbolic of the Canadian amateur title, was won by the Port Arthur Bear Cats. The National A.A.U. was captured by the Cleveland American Legion; International-American League, by Cleveland Barons; Eastern League, by New York Rovers; American Association, St. Louis Flyers; International Intercollegiate League, McGill University, and the Quadrangular League by Dartmouth.

Field Hockey. The war was responsible for the first interruption of the triennial series of women's international field hockey tournaments since the International Federation of Women's Field Hockey Associations was instituted a decade ago. October found London out of the running as a receptive hockey host. In the United States, the Middle Atlantic Sectional Association, comprising Philadelphia and District, made its debut in the National tournament and made a clean-up by winning all its matches, and gained seven of the eleven positions on the 1939 All-America first team. Three of the other four went to northeast players. The entire team named by the United States selection committee in order from left wing to goalkeeper were: the Misses Winifred Wolff (M.A.), Barbara Strohar (M.A.), Betty Shellenberger (M.A.), Lucy Jane Hedburg (M.W.), Marjorie Harrowell (N.E.), Barbara Strebeigh (M.A.), Betty Taussig (M.A.), Louise Orr (M.A.), Christine Hamilton (M.A.), Frances Pierce (N.E.), and Helen Park (N.E.). Miss Anne Parry of Glenside, Pa., internationalist who played on the team visiting Australia two years ago, was unable to play due to an ankle injury.

Lacrosse. Maryland came to the fore in intercollegiate Lacrosse competition, dethroning Navy from its 1938 championship in probably the hardest fought battle in a decade, 5-3. Starting the season with an 11-1 victory over Mount Washington, club champion, the Terrapins defeated every college opponent with a wide margin, until the Navy match. This struggle took so much out of the victors that they suffered their first and only defeat from twice-beaten Johns Hopkins, 6-3. Navy was also beaten only once, but as that was at the hands of Maryland, the Middies had to take second place.

Mount Washington won their club championship by nosing out the Baltimore Athletic Club.

Motorboating. With a total of fifty-six new American records established in twenty-seven speed-boat classes, premier World honors again went to the one-time world's fastest auto-speedster, Sir Malcolm Campbell, who smashed his own mark set up in 1938. Six years before, Gar Wood had astounded the motor boating world with his mark of 124.68 m.p.h. Five years elapsed before this mark was erased by Sir Malcolm's 1937 feat in increasing the speed to 125.79 m.p.h. The next year he raised it to 129.50 on Lake Maggiore, Italy, and later to 130.94 on Lake Hallwil in Switzerland. In 1939, on Lake Coniston, England, with his *Bluebird II*, engined with a 7-year-old Rolls-Royce motor, he raised the mark to the incredible speed of 141.74 m.p.h., August 19th.

In the absence of foreign competition, the Gold Cup returned to its native shores, Count Rossi being unable to defend his title won in 1938. In winning the trophy in the Detroit Regatta on September 4, 1939, Zalmon G. Simmons of Greenwich, Conn., drove his *My Sin* to a straight heat victory over *Miss Canada* and *Notre Dame*, establishing a new average speed record of 66.420 m.p.h. for the

90 miles. The President's Cup, also held by Rossi, took its maiden trip to Canada, when Harold Wilson of Ingersoll, Ont., in his father's *Miss Canada III*, defeated Mendelson's *Notre Dame*, setting a new total race record for the three 15-mile heats of 63.644 m.p.h. Simmon's *My Sin*, injured by driftwood, was unable to finish in this event.

Clinton R. Ferguson of Waban, Mass., young Hobart freshman, proved to be the outstanding amateur of the season. In July he created the unprecedented outboard record in driving a dead heat in a 5-mile Class C race with Gar Wood, Jr., in the record time of 53.925 m.p.h.; at Fort Worth, Texas, in September, he won the Class A and F National Amateur championships, and in November set a new American record for 1-litre outboards at 78.44 m.p.h. With these achievements, Ferguson had the additional glory of displacing the veteran professional, Freddy Jacoby of North Bergen, N. J., as the highest point scorer in the sport, accumulating 22,078 points, with Jacoby runner-up with a total of 18,371. George Schrafft outclassed all the other 225 cubic-inch drivers, winning the National championship for the John Charles Thomas Trophy and the American Power Boat Trophies at Washington with his *Chrissie III*. His nearest rival was Jack Cooper of Kansas City, 63 year old grandfather, whose *Tops III* set a new mile record for the Class of 87.485 m.p.h. at Picton, Ont., a competition record of 66.629 m.p.h. at Detroit, and won the International races for the class at Detroit capturing the Edenburn Memorial and Green-Duff trophies.

Gar Wood, Jr., Algonac, Mich., won the National C-Class Outboard championship for amateurs and was also National intercollegiate high scorer, representing Tulsa University. The National Sweepstakes went to Anthony Pezillo, Miami, with *Emancipator VIII*. The American Speedboat championship was won by John Bramble, Baltimore, with *Pep IV*. The National 135 Class was won by Edison Hedges, Atlantic City, N. J., with *Eagle*, and the 91 Class crown was captured by Arno Apel, Ventnor, N. J., with *Aguila*. Tulsa University won the National Intercollegiate team title. The Class B amateur outboard went to Jack Henckels, Fort Worth, and the Midget Class (open) to Alfred Anderson, Branford, Conn. In the National Professional Outboards, Class A and B were won by Paul Wearly, Muncie, Ind.; Class C by Claude Smith, Atlanta, and Class F by Robert Guttman, Manitowoc, Wis. Clayton Bishop, Onset, Mass., recaptured the Albany to New York motorboat marathon race, the only competitor to win it twice, having scored last in 1936.

Polo. Interest in Polo centered upon the triennial match between Great Britain and the United States for the International Polo Challenge Cup, played at Westbury, L. I., in June. The British team had been in preparation for the event for almost a year, arriving in California in mid-Winter for training before coming East. In their opening match, in California, they met with a severe loss in the fatal injury of the veteran Capt. C. T. I. Roark. In the line-up at Westbury the United States team was composed of Michael G. Phipps No. 1, Thomas Hichcock, Jr. No. 2, Stewart B. Iglehart No. 3, and Winston F. C. Guest, back. The British team included Robert Skene No. 1, Aldan Roark No. 2, Gerald Balding No. 3, and Eric Tyrrell-Martin, back. Despite their careful preparation the British were unable to match the

opposition in either play or ponies. The United States won in 2 straight games, scoring 11 goals to 7 in the first and 9 to 4 in the second. Since the series was decided in two games, the third was in the nature of an exhibition match, the British donating special trophies and the game played on handicap, establishing a precedent. In the six matches played since the World War, starting in 1921, one being omitted in 1933, the British teams have failed to win a single game, the United States having won by the same score, 2-0 throughout.

The National Open Championship was won by the Bostwick Field Team, G. H. Bostwick No. 1, Robert L. Gerry, Jr. No. 2, Elbridge Gerry No. 3 and Tyrrell-Martin, back, who defeated the Greentree team 8-7 in an exciting final. The latter team was composed of Peter Grace, Robert Skene, Hitchcock, and J. H. Whitney. Greentree came back to win the Monty Waterbury Memorial, however, most important of the handicap events, defeating the Texas Rangers with C. B. Wrightsman, Cecil Smith, Eric Pedley, and Guest, in the final 10-8.

The National 20-goal championship, formerly the National Junior, drew nine teams into competition at Bostwick Field. The final was won by the League of Nations team made up of Jay Secor, Ohio, Robert Skene, Australia, George Oliver, Texas, and Robert Loewenstein, Belgium, who defeated the Hurricanes 15-9. Terrence Preece No. 3 on the Hurricanes was injured in the opening period, which handicapped his team.

The Hulsaches of Texas won the National Intercircuit; Pegasus Club of New Jersey captured the National 12-goal title; Yale defeated Harvard in the final to win the Gerry Cup in the Intercollegiate championship, and the Blue Hills Farm team won the Sherman Memorial Trophy.

The National Indoor crown was won by the 124th Field Artillery Team of Chicago; West Point captured the Intercollegiate Indoor title, and Lawrenceville School was the victor in the Intercholastics.

Rowing. The outstanding features of the 1939 rowing season centered upon the achievements of Harvard at home and abroad and the retention of the Diamond Sculls by Joe Burke, with their indication of the supremacy of the United States in International competition, and the return of the West to dominate the Poughkeepsie classic.

Winning the Adams, Compton, and Rowe Cups early in the season, Harvard's great crew climaxed its domestic season with a clean sweep over Yale at New London on June 23, having met with only one defeat, by Cornell, in a bad storm at Ithaca. With little time to adjust a 4-mile crew to the Henley distance of a mile and five-sixteenths, they entered the Henley regatta, celebrating its 100th anniversary on July 6, winning three races to capture the famous Grand Challenge Cup, for the second time in history—a Harvard Junior Varsity lifted the historic trophy in 1914. The 1939 crew defeated the London Rowing Club on the first day; Jesus College of Cambridge on the second, and the Argonaut Rowing Club of Toronto in the final, with something to spare. A precedent was established when Tabor Academy, Marion, Mass., in an all-American final, defeated Kent School to win the Thames Challenge Cup, and Joseph Burke of the Penn A. C., Philadelphia, repeated his performance of 1938 in winning the Diamond Sculls, a triple triumph against scullers from all countries. Burke defeated R. Veroy of Poland in

the final on the Thames by one-and-a-quarter lengths.

At Poughkeepsie a powerful California Varsity eight swept to victory over the 4-mile course in the record breaking time of 18:12½, with Washington second, also under the old record in 18:14. Navy, dislodged from its year's reign as Intercollegiate champion, was third and was followed in order by Cornell, Syracuse, Wisconsin, and Columbia. The East took solace in the victory of Syracuse over Washington in the Junior Varsity event. The Freshman event over two miles was won by Washington with Columbia in second place.

The Oxford-Cambridge Boat Race was won by Cambridge on April 1, the light blue negotiating the 4½ mile course in 19:03, just one minute slower than her own record of 18:03 made on March 17, 1934.

A marked growth of interest and activity in rowing was an encouraging feature of the past season, and despite the doubt pervading the Olympic Games, the coaches are preparing to go through with the tryouts to be held at Princeton, pointing to establishing a national champion.

Shooting. Rifle. The 1939 National Rifle and Pistol Matches, held under the auspices of the National Rifle Association at Camp Perry, Ohio, was the scene of the largest attendance of expert shots in its history. Records were shot to pieces, and the Marines did most of the damage. The "Leathernecks" were responsible for capturing the President's Match, the Wimbledon Cup, the DuPont Trophy, and the Herrick Trophy. Sergeant Thomas J. Jones, U.S.M.C., in winning the President's Match (10 shots at 200, 600, and 1000 yards) tied the record for this event with 147 x 150. Alfred L. Wolters, Pfc. U.S.M.C., shooting against 1937 competitors, 20 shots at 1000 yds., won the Wimbledon Cup match with a perfect score of 100 (27 V's). First Lieut. Walter R. Walsh, U.S.M.C.R., was high man to win the DuPont Trophy in the All-around match with a total score of 1058 x 1150. The Herrick Team Trophy, open to teams of eight shooters, was won by the U.S.M.C. team with a perfect score of 800 and a total of 123 V's. The course was 20 shots per man at 1000 yds., so that each of the eight men comprising the team shot a perfect score, establishing a World record in team shooting.

The National Individual Match, Daniel Boone Trophy, was won by Sgt. Coats Brown, 22nd, Infantry, score 288 x 300; High Civilian, Arthur B. Jones, N. Y. Civ. Tm., score 285 x 300. The National Team Match, shot over the same course, was won by the U.S. Infantry Team, score 2757; high National Guard Team, winner of the Hilton Trophy, National Guard of Ohio, score 2712, and the Pennsylvania Civilian Team, ranking team of its class, winner of the Soldier of Marathon Trophy, score 2667.

In the small bore division, William B. Woodring, Illinois, 1938 Champion, and Vere Hamer, Minnesota, again competed for first place in the Critchfield Trophy National Championship. The positions were reversed however, Hamer capturing first place with 3192 x 3200 and Woodring, runner-up with 3190.

Pistol. The National Individual Pistol championship was won by P. M. Chapman, U.S. Treasury Team, with a score of 280 and the National Pistol Team Match (.45 Cal.) was captured by the U.S. Marine Corps Team with a total score of 1315. The Los Angeles Police Team again won the

N.R.A. Revolver Team Trophy, and Emmet E. Jones, member of the team, won the N.R.A. Grand Aggregate with a score of 1736; the .22 Cal. Slow Fire, Revolver or Automatic Match, score 191; the Clarke Memorial Trophy, score 291; the .45 Cal. Slow Fire, score 184, and the N.R.A. All-Around Pistol Match with a total of 558. The International Pistol team match was won by the U.S. Team, total score, 1820; Canada, 1738, Great Britain, 1721, Cuba, 1581.

Trapshooting. The 34th Annual Amateur Trapshooting championship, held at Travers Island resulted in the veteran nimrod, Steve Crothers of Conshocken, Pa., winning the title after a four-way shoot-off, having broken 197 x 200 in the regular shoot at 16 yds., Class AA Singles. H. T. Bullock, Vineland, N. J. won the Class A Singles, 16 yds., 197-200, and J. J. Vaugonsic, also of Vineland, won the Class B Singles, 194 x 200. J. Heistand, Hillsboro, O., won the doubles event 97 x 100. In the Distance shoot, J. D. Riggs, Conshocken, Pa., scored to win 97 x 100 at 24 yds. Later, Riggs established a new State record in the State of New Jersey Championship shoot with a score of 300 straight targets at 25 yards. Mrs. Blondie Wolfe, N. Bergen, N. J., won the Women's event with 97 x 100.

In the Grand American Handicap, held at Vandalia, O., in August, the championship was won by Dwight L. Ritchie, Goshen, O., in a shoot-off, after breaking 99 x 100, at the 22 yd. line and tying G. A. Wagner of Dayton. The North American Handicap women's championship was won by Mrs. William Gilbert of Madison, Wis., a virtual tyro at the traps, who borrowed a gun from a friend and broke 98 x 100 to take the title. Fred Tomlin, professional from Glassboro, N. J., who won the Professional title event with 199 x 200 was the outstanding target breaker of the year making an all-time record for total targets broken, 2433 x 2450, giving him the unprecedented percentage of .993 and obliterating his previous world's record of .9922 made in 1938.

Skeet. As in the case of the trapshooting competition, shoot-offs for the championship titles prevailed in the Skeet contests, at the fifth annual National Meet at San Francisco in August. Dick Shaughnessy, 17-year old contestant who won the men's National all-gauge title when he was only 14, continued his sensational performance despite the fact that he lost his 20-gauge crown to Don Sperry of Flint, Mich., who won the title with 99 x 100. Shaughnessy however, captured the sub-small gauge championship with 94 x 100, and gave Sperry a close run for both the 20-gauge and the Men's small gauge. The High-Over-All title went to Robert Parker, Tulsa, Okla., 534 x 550, who, with his father, G. C. Parker, Sr., won the Father and Son title with a score of 484 x 500 and the Family 20-gauge with 189 x 200 and, with Walter Dinger, two-man team title 494 x 500. Dinger who hails from Tulsa, Okla., won the all-gauge crown after a shoot-off, five tying for first place with 247 x 250. Miss Pat Laursen, Akron, O., was the only woman to retain her title and she had to engage in a shoot-off to win at 236 x 250; Mrs. Hochwalt, Edmonds, Washington, won the 20-gauge women's with 84 x 100; Mrs. Smythe, Aurora, O., won the women's small-gauge, 87 x 100 and also the sub-small-gauge, 82 x 100. Robert Parker won the Junior title 100 x 100.

Skating. Figure skating in 1939 enjoyed a marked increase both in its activity and popularity, particularly as a feature of entertain-

ment. In the competitive field, it was one of the few sports in which several of the champions retained their titles. Robin Lee, who has since turned professional, retained his National title as men's champion for the fifth consecutive year, at the tests held in St. Paul, Minn. Miss Joan Tozzer of Boston held the women's National crown which she won last year and also, with Bernard Fox, retained the National Pair title. The Junior Singles titles were won respectively by 13-year old Gretchen Merrill of Boston and 14-year old Arthur Vaughn of Philadelphia, both 1938 novice champions. Miss Sandy MacDonald and Harold Hartshorne of New York, won the National Dance Competition.

The Biennial North American Championships held in Toronto were again dominated by Canadians. Montgomery (Bud) Wilson of Toronto, who has held the title since 1929, won the Men's North American Singles championship. Miss Mary Rose Thacker won the Women's Singles. Miss Tozzer and Bernard Fox, however, won the North American pairs crown. The North American Fours title was captured by the Misses Dorothy and Hazel Caley, Montgomery S. Wilson, and Ralph McCreath of Toronto.

The men's Singles Championship of the World, was won at Budapest by Graham Sharp, of England, Felix Kaspar, defending titleist not competing. Miss Megan Taylor of England, retained her World Women's Singles Title at Prague but was defeated for the European championship by her compatriot, Miss Cecilia Colledge. The World's Pair championship was retained by Fraulein Maxi Herber and Ernst Baier, Germany.

H. CHARLES RAWLINS.

Swimming. Old records were shattered at random in the world of water sports and sweeping successes were established by American swimmers at home and abroad. Other outstanding features of the year were the conspicuous role played by young girls in title competitions for women and the first victory ever scored by an Hawaiian team in the national A.A.U.

In the field of breast strokes, Richard H. Hough of Princeton University, cut the world's records down to 1:00.6 for 100 yards; 1:07.3 for 100 meters; and 2:22 for 200 yards. Ralph Flanagan, of Austin, Tex., lowered the previous record for 500 meters free style to 5:56.5; Adolf Kiefer, of Chicago, that for 100 yards back stroke to 0:58.8; and the New York A. C. team of Thomas McDermott, James Reilly, Peter Flick and Walter Spence set a new 400-yard relay record at 3:31.3. An American short course mark of 2:51.9 for the 300-yard medley relay was achieved by the Princeton trio of Albert Vande Weghe, Hough and Hendrick Van Oss.

The men's national outdoor championships were won by a group of Hawaiians representing Alexander House Community of Maui, Hawaii. The islanders defeated the Detroit A. C., next in line at the competition, by a score of 32 to 29.

Miss Nancy Merki, of Portland, Ore., thirteen, a former victim of infantile paralysis, cut the American long course free style records for 200 meters from 2:34 to 2:30.8; 400 meters from 5:28.5 to 5:22.2 and 800 meters from 11:32.2 to 11:19.9. Miss Jane Dillard, of Austin, Tex., at the breast stroke, established a world's record of 1:16.6 for 100 yards (a mark subsequently beaten in Europe). Miss Fujimo Katsutani, of Hawaii, fifteen year old, set a national breast stroke record of

3:13 for 200 yards, short course; Miss Helene Rains, of New York, fourteen, achieved a similar feat when she traveled 200 yards in 2:49 on a 20-yard course.

The Misses Edith Motridge, Esther Williams and Virginia Hopkins of the Los Angeles A. C. cut down the time for the 200-meter medley from 4:01.6 to 3:52.8; while the last two, with Miss Marion Hopkins and Miss E. Chamberlin, reduced the time for the 400-meter free style test from 4:54.8 to 4:46.

Michigan captured the National Collegiate A. A. championship, defeating Ohio State, runner-up, by 65 to 58. Yale grabbed the Eastern premiership.

Noteworthy among new varsity marks in swimming, were 2:19.8 for 200 yards breast stroke, 20-yard course, by Richard H. Hough, and 3:38.7 for the 400-yard relay, long course, by a Michigan four.

Tennis. The projection of Donald Budge into the professional ranks and the loss of the Davis cup to Australia were two inter-related highlights in the 1939 world of net and racket. Lifting the trophy for the first time since 1919, and under circumstances reminiscent of 1914, the Australian team of Adrian Quist, John Bromwich, Capt. Harry Hopman and Jack Crawford, took it with them to the Antipodes, where it was reportedly interned for the duration of the war.

Robert Riggs and Frank Parker represented the United States in the singles and Joe Hunt and 18-year-old Jack Kramer constituted the doubles team. On the first day, Riggs overcame Bromwich with an exhilarant tactical display and Parker followed by the vanquishing the veteran Adrian Quist. The doubles, as anticipated, were carried off by Quist and Bromwich. Quist narrowly edged out Riggs in five sets on the final day and Bromwich overpowered Parker in the deciding match. After dropping the first two sets to Quist, Riggs gained power and precision and appeared to be on the road to victory as his opponent drooped; but by an effort born of sheer determination, the Australian drove ahead in the last few minutes to a squarely earned triumph. The matches were held on the turf of the Germantown Cricket Club the first week in September.

Robert Riggs succeeded Budge as national champion and also as champion of Great Britain, defeating 19-year-old Welby Van Horn of California in the final at Forest Hills and Elwood Cooke in the final at Wimbledon. In the national championships, Bromwich, who had been generally expected to establish himself as the new world's amateur champion, was beaten by Van Horn. Quist was eliminated by Wayne Sabin of Portland, Ore., who was himself erased by Van Horn.

The United States retained the Wightman Cup from England for the ninth successive year. Donald McNeill of Oklahoma City won the championship of France. Americans made a clean sweep of the singles, doubles, and mixed doubles at Wimbledon.

Miss Alice Marble was the undisputed ruler of women's tennis. Once again she defended her British crown with success, and won the American championship for the third time, thus retiring the trophy, after being seriously challenged by Miss Helen Jacobs; with Mrs. Sarah Palfrey Fabyan, she won the women's doubles in both championships; and also her doubles with Mrs. Fabyan in the Wightman Cup matches.

Quist and Bromwich carried off the men's doubles championship, defeating Crawford and Hop-

man in the first all-foreign final in the history of the tournament.

Making his debut as a professional, Budge overcame Vines at Madison Square Garden, returning there later in the year to conquer Fred Perry. The national professional championship was won by Vines.

Turf. The chief headline horses of 1939 were *Challedon*, *Johnstown*, *Eight Thirty*, *Bimelech*, the undefeated two-year-old champion, and *Kayak II*. *Challedon*, carrying the silks of W. L. Brann, was the greatest money-maker, winning nine races for the fame of it and \$184,535 for the pocketbook. He was the acknowledged three-year-old king after he won the Arlington Classic, although an ailment kept *Johnstown* from challenging him in this classic. In March, *Kayak II*, owned by Charles S. Howard, and Warren Wright's *Bull Lea* won the winter handicaps at Santa Anita and Miami respectively. William Woodward's *Johnstown*, capturing the public imagination with his speed and élan, raced to victory in the Wood Memorial and Kentucky Derby and defeated *Challedon* for the Dwyer Stakes at Aqueduct. *Challedon* had previously won the Belmont Stakes for which *Johnstown* was ineligible. Frank Keogh, a patrol judge, said after the Dwyer that when *Johnstown* passed his station he was making a peculiar noise, as though gasping for breath. By the time the Arlington Classic came to pass, *Johnstown* was whistling while he worked, but in spite of his condition, was pronounced a favorite. He led for a mile, then fell back and was decisively beaten by *Challedon*. It was *Johnstown's* last race. Thereafter tracks seemed much roomier to *Challedon*. He outclassed *Kayak II* like nobody's concern in the Narragansett Special, set a new record at Kenneland, and defeated *Kayak* again in the Pimlico Special at weight for age.

Bimelech, owned by E. R. Bradley, commanded the field among two-year-olds, starting six times, winning six times and making off with \$135,090. He won the Special and Hopeful at Saratoga, the Futurity at Belmont Park and the Pimlico Futurity.

War Plumage, owned by James Cox Brady, was the champion three-year-old filly. *Now What*, from the Vanderbilt stable, was acknowledged the fastest two-year-old of her sex.

Two important events of the year were the public approval of the pari-mutuel amendment in New York State and the accession of Alfred Gwynne Vanderbilt to the presidency of Belmont Park.

Track and Field. Human running records were freely broken during 1939 and distinction in this respect attached particularly to the name of Taisto Maki, a native of Finland, who annihilated five world's records as follows. He raced two miles in 8 minutes, 53.2 seconds; three miles in 13:32.4; 5000 meters in 14:08.8; six miles in 28:55.6 and 10,000 meters in 29:52.2. Rudolf Harbig, German track star, covered 400 meters in 46 flat and 800 meters in 1:46.6, new marks for those respective distances.

At Princeton in June, in a one-mile race, Sydney Wooderson, bespectacled London bank clerk, of whom much was expected, ran last in a field of five, and claimed that he was fouled. Chuck Fenske, who won the race, subsequently was beaten for the National A.A.U. 1500-meter championship by Blaine Rideout.

In indoor racing, Glenn Cunningham was unbeatable at the mile, but was outrun twice at 1000 yards by John Borican, a Negro; and on the sec-

and occasion Borican set an indoor record of 2:08.8 as Cunningham, finishing on his heels, also broke the record. Cunningham finished first in a two-mile indoor competition, preceding Don Lash, Greg Rice, and Tommy Deckard at the finish line.

Borican set outdoor records of 1:49.2 and 1:49.8 for 800 meters and 800 yards on the Dartmouth track, but could not win an outdoor race. Clyde Jeffery of Stanford gained a disputed decision in the national 100 meters over Herbert Thompson and lost his only furlong race of the year to Norwood Ewell, Penn State freshman, in the nationals.

Charley Beetham won the national 600-meter indoor title and the national outdoor 800 meters. Erwin Miller, of U.S.C., lost only one race, to Woodruff, in the I.C. 4-A.

Joe Batiste, a Negro schoolboy from Tucson, won the national high hurdles title, beating Fred Wolcott of Rice. After breaking a dozen meet records and the American record in the shotput, Elmer Hackney of Kansas State lost the national title to Lilburn Williams. Boyd Brown became the champion among javelin throwers, although many observers considered Bob Peoples of U.S.C. the country's best. For the team title, the New York A. C. was dethroned by the Olympic Club.

Southern California won the varsity team competition, garnering both the I.C. 4-A (with a record point score) and the N.C.A.A. championships.

Don Lash finished first for the sixth consecutive time in the National A.A.U. cross-country championship over Newark's 10,000-meter (6¼ miles) Branch Brook course. Gregory Rice was second. Lou Gregory won the National A.A.U. 10,000-meter race at Lincoln, Neb. Frank (Pat) Dengis took the laurels at the Yonkers marathon. (Dengis was killed in an airplane crash in December.)

HAROLD J. COOPER.

SPRATLY ISLANDS. See JAPAN under History.

SQUALUS DISASTER. On May 23, 1939, during a training trip off Portsmouth, N. H., the newly built submarine, the U.S.S. *Squalus*, made a quick dive and sank in 240 ft. of water with a loss of 26 lives. Subsequent investigation developed that through faulty operating gear the engine air induction valve was open, thus permitting large quantities of water to enter the hull. When radio communication with the submarine failed, a sister ship in the vicinity, the U.S.S. *Sculpin*, commenced a search and soon found a marker buoy released from the sunken craft and established telephone communication. In the heavy swell, the light cable of the marker buoy soon carried away. Meantime, however, divers and salvage gear were being rushed to the scene by ship and plane.

The submarine rescue vessel, *Falcon*, on arrival, secured herself in position over the sunken craft and sent down divers to attach a diving bell, specially designed for submarine rescue work, over a hatch. Through this bell the surviving 33 members of the crew were rescued. Four trips of the bell were required, on the last of which the down-haul cable became jammed and delayed surfacing for several hours. The expeditious and efficient manner in which the operations were carried resulted in saving all those not drowned in the initial rush of water. Such an accomplishment from a depth of 240 ft. was remarkable and without precedent. The success of the operation was attributable not only to the skill and fortitude of those conducting the rescue, and to the efficient

design of the gear used, but was also due to the thorough manner in which the Navy had for years drilled the submarine personnel against such a contingency as actually occurred.

Salvage operations were begun immediately and prosecuted diligently day and night until the *Squalus* was placed in dry dock on September 15. On the first lift when the ship finally broke away from the mud her positive buoyancy, obtained by forcing air into the hull, sent her to the surface with a rush. But before openings could be sealed she sank again. By use of pontoons and lifts by stages she was finally brought into shallow water and 115 days after originally sinking she entered dry dock. Over 600 dives were made in the rescue and salvage work, half of them at depths over 200 ft. The damage the *Squalus* sustained was not great and naval authorities expected that within a few months she would be ready to join the fleet.

C. H. McMORRIS.

SSB. Social Security Board (q.v.).

STAMP COLLECTING. The close of the year 1939 saw stamp collecting on the last step to celebrating 100 years of active service. It was on May 6, 1840 that Sir Rowland Hill's invention made its appearance in Great Britain and since has become renowned as the "Penny Black." The international crisis and resulting war in the fall of 1939 caused the Royal Philatelic Society, London, to abandon plans for celebrating this event—the "Black's" centenary—with an international exhibition.

Out of dismembered Czecho-Slovakia came two new stamp-issuing sources, Slovakia, and Bohemia and Moravia; Poland was destroyed by the German lightning war and lost its identity, save for designations as now being parts of Germany and Russia; the Free City of Danzig was returned to the Reich and its stamps were replaced by those of Germany; Italy swept Albania off the map as an independent country, and the only remainder of Albania philatelically is that Italian stamps for that addition to Victor Emmanuel's empire are printed in Albanian. End of the revolt in Spain halted a flood of postage stamps from both sides. France surrendered Alexandretta to Turkey, and the ancient name of Hatay appeared on postage stamps.

The United States added coil varieties of set of stamps portraying its presidents; two world's fairs were marked with stamps, that at San Francisco in February, that at New York in April when first-day records were broken with the sale of 1,964,743 copies; stamps were issued for the 150th anniversary of the inauguration of George Washington as the first president; to mark the opening of the Panama Canal 25 years earlier; for baseball's 100th birthday; for printing's tercentenary in the United States; and to note the admissions of North Dakota, South Dakota, Montana, and Washington to statehood 50 years ago. See Post OFFICE DEPARTMENT.

Start of the first transatlantic air-mail service from New York to Europe by Pan-American Airways was cause for the issuance of a special 30¢ stamp. Service was over two routes: North, New York to Southampton via Moncton, N. B., Botwood, Nfld., and Foynes, Eire; South, New York to Marseilles, via Horta, Azores, and Lisbon, Portugal. War curtailed this service to the southern route, with the last stop at Lisbon. From England, Imperial Airways also started service to the United States over the northern circuit but

war forced its abandonment. Another airmail development was the use of an autogyro to speed mail from the Camden, N. J., airport to the post office at Philadelphia.

Threats of war and actual war slowed up stamp production in Europe. France, generally prolific in this field, curtailed emissions with the start of strife in the fall. Stamps from Germany, after war began, mostly related to conquest of Poland and Danzig. England continued with its George VI set. Russia, as usual, was a heavy producer. The great majority of stamps appearing from Europe were from the German protectorates, Slovakia and Bohemia and Moravia. During the year, throughout the world, more than 2000 stamps were issued, most of these being of a commemorative nature.

DAVID LIDMAN.

STANDARD OIL CO. See ARABIA and BOLIVIA under *History*.

STANFORD UNIVERSITY. A privately endowed institution of higher education, nonsectarian and coeducational, founded in Santa Clara County, Calif. (near Palo Alto) on a 9000-acre tract of land in 1885, and opened in 1891, in memory of Leland Stanford, Jr. The total enrollment in 1938-39 was 5086. The 1939 summer quarter had an enrollment of 929. In the autumn quarter of 1939 the enrollment was 4360, of which approximately 40 per cent were women, and the faculty numbered 743, including 169 teaching assistants. The endowment funds amounted to \$31,000,000, and the budget income for the year was \$3,278,200, plus gifts of \$1,051,643. Through a gift of \$97,000 from Mrs. Louis Stern, of Palo Alto, the Ruth Lucie Stern Research Laboratory was built in connection with the Stanford Medical School, in San Francisco. Outstanding among the gifts for research was a grant of \$200,000 from the Rockefeller Foundation for research in Chemo-Physical Biology, beginning 1939-40. The University Libraries contained 740,000 volumes and 4000 periodicals. President, Ray Lyman Wilbur, M.D., LL.D., Sc.D.

STARS. See ASTRONOMY.

STATE, U.S. DEPARTMENT OF. Cordell Hull of Tennessee was Secretary of State during 1939 and Sumner Welles of Maryland was Under Secretary. Following the administrative reorganization of July 1 (see under UNITED STATES), the Department took over the foreign commerce division from the Department of Commerce, the foreign agricultural service from the Department of Agriculture, and the Foreign Service Buildings Commission, formerly an independent agency. Expenditures are given in the table under PUBLIC FINANCE. See the section on *Foreign Affairs* in the article on the UNITED STATES.

STATE TAXATION. See TAXATION.

STATISTICAL ASSOCIATION, AMERICAN. A scientific organization founded in Boston in 1839 to foster an interest in statistics and to promote scientific methods of collecting and interpreting statistical data. The official publications are the *Journal of the American Statistical Association* and the *American Statistical Association Bulletin*. The Association has 17 chapters in important American cities. It has a number of committees in various statistical fields, some of which conduct special conferences at various times during the year.

The Association's 101st annual meeting was held in Philadelphia, Pa., Dec. 27 to 30, 1939.

Several joint meetings were held with the American Economic Association, the American Sociological Society, the American Marketing Association, the American Farm Economic Association, the American Association for Labor Legislation, the Population Association of America, the Econometric Society, and the Institute of Mathematical Statistics, which were meeting in Philadelphia at the same time.

The following officers were elected for 1940: President, F. Leslie Hayford, General Motors Corporation, New York City; Vice Presidents, Howard W. Green, George W. Snedecor, Neva R. Deardorff, Alfred J. Lotka, Ralph J. Watkins, William A. Berridge, Donald S. Thompson, and Theodore N. Beckman. Secretary-Treasurer, Frederick F. Stephan, 1626 K Street, N.W., Washington, D. C.

STEAM-GENERATING UNITS. See POWER PLANTS.

STEEL. See IRON AND STEEL.

STEROLS. See BIOLOGICAL CHEMISTRY.

STEVENS INSTITUTE OF TECHNOLOGY. A college of engineering at Hoboken, N. J., founded in 1870. The total enrollment for the autumn of 1939 was 909. There were 83 members of the teaching staff. There were 30,000 volumes in the library. President, Harvey Nathaniel Davis, Ph.D., Dr.Eng.

STEVENSON, J^(OSEPH) ROSS. An American theologian, died in New York, Aug. 13, 1939. Born in Ligonier, Pa., Mar. 1, 1866, he was educated at Washington and Jefferson College (A.B., 1886; D.D., 1897) and the McCormick Theological Seminary in Chicago (1889). After study at the University of Berlin (1889-90), he was ordained in the Presbyterian ministry and assigned to Sedalia, Mo. In 1894 he joined the faculty of McCormick Theological Seminary, retiring as full professor in 1902. Called to the Fifth Avenue Church, New York in 1902, he remained there until 1909 when he went to Brown Memorial Church, Baltimore.

In 1914, Dr. Stevenson was elected president of Princeton Theological Seminary, serving until 1936 when he was retired as president emeritus. His presidency was marked by the conflict between fundamentalists and conservative modernists during 1925-29, which led to the establishment of Westminster Seminary in 1929 by the fundamentalists. The year after his election to the presidency he received the highest honor the Church could give—Moderator of the General Assembly.

Dr. Stevenson served on many Church committees, including the Presbyterian General Assembly's Department of Church Co-operation and Union, and he was one of the leaders of his denomination in the proposed concordat with the Protestant Episcopal Church. During the World War he served overseas with the Young Men's Christian Association and the Army Education Commission.

STILBESTROL. See MEDICINE AND SURGERY.

STOCKARD, CHARLES RUPERT. An American biologist, died in New York, April 7, 1939. He was born in Washington County, Miss., Feb. 27, 1879, and was educated at the Mississippi Agricultural and Mechanical College (B.Sc., 1899), Columbia University (Ph.D., 1906), and the University of Wurzburg (M.D., 1922), and also studied at the Carnegie Institute Laboratory for Tropical Biology in Florida (1907-09), and

at the Naples Zoological Station (1910). Upon graduation from college, he joined the faculty at Mississippi as commandant and acting professor of military science and tactics, and in 1900 he held the same positions at Jefferson Military College.

In 1903 he went to Columbia University to study and two years later became an assistant in the zoological department. He joined the staff of Cornell Medical College in 1906 as assistant in embryology and histology, and was successively instructor of comparative morphology (1908-09), assistant professor of embryology and experimental morphology (1909-11), and thereafter professor of anatomy. Dr. Stockard's reputation as a scientist was won in the field of morphology and particularly for his discoveries of the physical and psychological implications of the activity of the glands and genes. His work was recognized by invitations to deliver the DeLamar lecture at Johns Hopkins (1925), the Harrington lecture at the University of Buffalo (1926), the Beaumont Foundation lecture at Detroit (1927), the Lane lecture at Stanford (1930), the Potter Memorial lecture at Jefferson Medical College (1934), and the Joseph Collins research lecture at the N. Y. Academy of Medicine (1937). From 1908 he was an investigator for the Huntington Fund for Cancer Research and was also president of the board of the Rockefeller Institute for Medical Research.

A leader in his profession, Dr. Stockard was a fellow of the American Association for the Advancement of Science, president of the Association of American Anatomists (1928-30) and of the American Society of Zoologists (1925) and edited the *American Journal of Anatomy*, the *Journal of Experimental Zoology*, and the *American Anatomical Memoirs*. He wrote *Origin of Blood* (1915), *Hormones and Structural Development* (1927), and *The Physical Basis of Personality* (1931).

STOCK EXCHANGE. See FINANCIAL REVIEW.

STRACHEY, JOHN. See IMMIGRATION AND EMIGRATION.

STRAITS SETTLEMENTS. A British crown colony comprising the four settlements of Singapore (with Christmas and Cocos-Keeling islands), Penang (with Province Wellesley), Malacca, and Labuan. Total area, 1356 square miles; population (1939 estimate), 1,357,854, compared with 1,114,015 (1931 census). During 1938 there were registered 56,735 births, the rate (per 1000) being 42.2; the death rate (per 1000) was 21.3. Chief towns: Singapore, the capital, 520,164 inhabitants (1937); George Town (Penang), 149,408 (1936); Malacca, 43,258 (1937); and Victoria, 2022. In 1937 the 759 schools for primary and secondary education had 137,392 students enrolled. In addition there are various vocational and industrial schools, a college of medicine, and a college of arts and science.

Production and Trade. Rubber (503,127 tons, 1937); rice; coconuts; pineapples; coffee; fish; tin (100 metric tons, 1937); phosphate of lime (162,000 metric tons exported from Christmas Island during 1938); and tobacco, were the chief products. The trade of Singapore and Penang consists mainly of the collection and distribution of commodities for the whole of Malaysia, especially the Netherlands Indies. Singapore is a natural distribution point for oil and shipments are made to Australia and Africa. In

the direct foreign trade of the Straits Settlements for 1938 imports totaled £65,264,000; exports, £67,848,000.

Communications. Merchant shipping that entered and cleared the ports during 1938 aggregated 45,145,274 tons. There were 1165 miles of roads. Railways are owned by the government of the Federated Malay States. In 1939 air services linked Singapore with Penang, London, Amsterdam, Australia, and Hong Kong.

Government. For the year 1939 revenue was S\$40,227,000; expenditure, S\$45,368,000. The budget for 1940 anticipated receipts of S\$38,204,000 and expenditures of S\$45,261,000. (Straits dollar averaged \$0.5692 in 1938 and \$0.5797 in 1937). The government is under a governor who is aided by an executive council of 11 members (8 ex officio and 3 unofficial) and a legislative council of 26 members (13 ex officio and official, 11 nominated unofficial, and 2 unofficial members elected by the Singapore and Penang Chambers of Commerce). Governor and Commander-in-Chief, Sir Shenton Thomas.

History. The approach of hostilities in Europe caused repercussions in Singapore and the Straits Settlements throughout 1939. High-ranking members of the British and French naval, military, and air forces—some 60 officers in number—held an important conference in Singapore in June concerning the joint defense of Franco-British possessions in that part of the world. The following month detachments of British troops were being moved from India to the garrison in Singapore. Work on the Singapore naval base reached feverish proportions with the outbreak of the war and by December it was said to be capable of maintaining and repairing a full-sized battle fleet and of withstanding a siege of indefinite duration. The Straits Settlements Legislative Council (April 24) presented the British government with a gift of £1,000,000 for imperial defense. The donation supplemented £1,167,000 given in 1938 and was additional to a regular annual defense contribution of £467,000.

STRATEGIC WAR MATERIALS ACT. See CHROMIUM; MANGANESE; TIN.

STRECKER CASE. See IMMIGRATION AND EMIGRATION; SUPREME COURT.

STREETS. See ROADS AND STREETS.

STRIKES. See LABOR CONDITIONS; NATIONAL LABOR RELATIONS BOARD; CALIFORNIA; IOWA; KENTUCKY; MAINE; also CZECHO-SLOVAKIA and JAPAN under *History*.

STUDENT WORK PROGRAM. See NATIONAL YOUTH ADMINISTRATION.

STYLE. See FASHION; GARMENT INDUSTRY.

SUBMARINES. See NAVAL PROGRESS; SQUALUS DISASTER; for submarine warfare, see EUROPEAN WAR.

SUBWAYS. See RAPID TRANSIT.

SUDAN. See ANGLO-EGYPTIAN SUDAN; FRENCH WEST AFRICA.

SUDETENLAND. See CZECHO-SLOVAKIA and GERMANY under *Area and Population, History*.

SUEZ CANAL. A waterway connecting the Mediterranean with the Gulf of Suez and the Red Sea. Traffic in 1938 totaled 6171 vessels of 34,418,000 net tons, as compared with 6635 vessels of 36,491,000 net tons in 1937. The decrease was attributed largely to the normalization of conditions in Italian East Africa. Passengers in 1938 numbered 479,802 (697,800 in 1937). Great Britain accounted for 50.4 per cent of the 1938 tonnage; Italy was

second with 13.4 per cent, followed by Germany, the Netherlands, France, and Norway.

The total weight of goods transported through the canal in 1938 was 28,779,000 tons, a decrease of 12.2 per cent from 1937. The number of south-bound vessels was 3003 (16,655,881 net tons); north-bound, 3168 (17,762,306 net tons). Beginning Dec. 15, 1938, dues were 5s. 9d. sterling per ton for vessels with cargo and 2s. 10½d. per ton for vessels in ballast; passengers were charged 5s. 9d. sterling. In accordance with a convention signed on Oct. 29, 1888, the Suez Canal is exempted from blockade and vessels of all nations, whether armed or not, have been allowed to pass through it in peace or war. See FRANCE and ITALY under *History*.

SUGAR. The sugar-beet crop in the United States in 1939 was estimated at 10,691,000 tons of beets from 921,000 acres, expected to produce about 1,607,000 tons (equal to 1,719,000 raw ton basis) of sugar, compared with the 11,615,000 tons of beets, 930,000 acres, and 1,685,000 tons of sugar in 1938, and the 1928-37 average of 8,486,000 tons of beets from 763,000 acres and 1,238,000 tons of sugar. The acre yield was 11.6 tons as compared with 11.1 tons, the 10 year average. Average acre yields in many major beet states were below the record yield in 1938, yet in 1939 sugar content averaged 15.03 per cent as against 14.51 in 1938. Beet-sugar production in leading states was estimated for California 436,000 short tons; Colorado 262,000; Michigan 160,000; Montana 138,000; Idaho 129,000, and Nebraska 102,000 tons.

The 1939 sugar-cane crop of Louisiana and Florida, including cane for seed was grown on 256,000 and 21,600 acres respectively and was estimated as 5,447,000 and 758,000 tons and equivalent to 433,000 and 78,000 tons of sugar. Molasses as a sugar-cane by-product totaled 38,675,000 gallons. Sugar-cane sirup produced in eight southern states totaled 23,159,000 gallons and the sorgo sirup made in 16 states amounted to 10,230,000 gallons.

Maple products reported by 10 states included 2,515,000 gallons of sirup and 760,000 pounds of maple sugar. Destruction of trees in the New England States by the hurricane of September, 1938, accounted for much of the decline from 1938.

The production of raw beet-sugar for the season of 1939-40, as reported by 25 countries to the International Institute of Agriculture, approximated 12,543,000 short tons. Other leading producing countries included Germany 2,900,000 tons; U.S.S.R. 2,600,000; France 1,138,000; United Kingdom 605,000; the area formerly Czecho-Slovakia 599,380, and Italy 515,000 tons.

The world's cane-sugar production for the 1938-39 season, according to estimates of Willett and Gray issued Jan. 18, 1940, amounted to 18,436,515 short tons. Production in leading countries was for British India, gur (low grade) 2,888,708 tons, and white sugar 813,200 tons; Cuba 2,758,552; Japan and Formosa 1,663,750; Java 1,543,430; Brazil 1,080,031; Philippine Islands 876,934; Hawaii 855,000; Australia 822,744; Puerto Rico 760,678; Natal 466,723; and Argentina 465,630 tons. The world beet-sugar production was estimated to total 10,215,665 tons, including Germany 2,145,141 tons; U.S.S.R. (Russia and Ukraine) 2,300,000; France 858,892; Poland 540,378; and Czecho-Slovakia 530,474 tons. The grand world-total for beet- and cane-sugar in 1938-39 amounted to 28,652,180 tons. Preliminary

world total estimates of 30,409,000 tons for 1939-40 included cane sugar 19,018,000 tons and beet sugar 11,391,000 tons.

HENRY M. STEECE.

SUICIDES. See VITAL STATISTICS.

SULFANILAMIDE; SULFAPYRIDINE. See BIOLOGICAL CHEMISTRY; MEDICINE AND SURGERY; VETERINARY MEDICINE.

SULPHUR. The United States is the dominant country in world elemental sulphur production, accounting for nearly 90 per cent of the total. Texas produces approximately 85 per cent of the domestic output, and together with Louisiana accounts for about 99 per cent of United States production. Utah and California contribute minor tonnages to the total. Some elemental sulphur is recovered as a by-product of smelting sulphide ores, but the great bulk of the production is from deposits of native sulphur. Italy and Japan hold second and third rank, respectively, in world sulphur production.

Shipments of crude sulphur by United States producers for domestic consumption and export in 1939 were approximately one-third larger than in 1938. In the latter year shipments for domestic consumption amounted to 1,052,890 long tons, and for export, 575,957 long tons, or a total of 1,628,847 long tons. An increase of one-third in 1939 would show total shipments of approximately 2,170,000 long tons. Of this quantity shipments for domestic consumption are estimated at 1,546,000 tons, and exports at 624,000 tons. Although the industry experienced an improvement in 1939 compared with 1938, it did not equal the record year of 1937 when shipments aggregated 2,466,512 long tons, according to *Minerals Yearbook* of the Bureau of Mines.

H. C. PARMELEE.

SUMATRA. See NETHERLANDS INDIES.

SUNDAY-SCHOOL UNION, AMERICAN. A nonsectarian society, organized in Philadelphia in 1817 to establish and maintain Sunday schools in the rural and mountain sections of the United States and to publish and circulate Christian literature. Its board of managers and missionary force are composed of men representing many of the Protestant denominations. For the year ending Feb. 28, 1939, the society maintained 3444 Union Sunday schools, with 143,447 teachers and scholars, and conducted 1054 daily vacation Bible schools, with 27,137 in attendance. During the same period it established 192 young people's societies, conducted 47 young people's Bible Conferences, opened 80 preaching stations, organized 19 churches which were turned over to the various denominations chosen by their constituencies, and erected 9 church buildings. The officers were: President, E. Clarence Miller, LL.D.; vice-presidents, Robert L. Latimer and James F. Shrader; national secretary of missions, Elliott D. Parkhill, D.D.; editor of publications, Arthur M. Baker, Ph.D.; and treasurer, John H. Talley. The national office is at 1816 Chestnut Street, Philadelphia, Pa.

SUPREME COURT, (U.S.). The vacancy in the membership of the Supreme Court left by the death of Justice Cardozo in 1938, was filled by the appointment, January 5, of Felix Frankfurter, a professor of law at Harvard University. The Senate confirmed his nomination with little delay. A new vacancy occurred soon after, through the retirement of Justice Louis D. Brandeis, 82-

year-old liberal, who had served for 22 years. The President nominated in his place, March 20, William Orville Douglas, then Chairman of the Securities and Exchange Commission, a tested servant of the Administration, born 40 years before in Minnesota and grown to manhood in the State of Washington. His appointment confirmed by the Senate, April 4, Douglas took office April 17, the youngest man, so it was said, to join the Supreme Court in a century or more. Douglas, like Frankfurter, was a liberal replacing another liberal without definitely altering the balance of the Court's mind. But on November 16 came yet another vacancy, through the death of Justice Pierce Butler (q.v.), 73 years old, who had held steadily to the conservative legal doctrine. His place was not filled in 1939.

Decisions of the Court. Decisions as to the extent of Federal authority and the validity of its steps were mainly favorable, though not invariably. With regard to control over the relations of employer and employee, proceedings of the NLRB were found faulty in three important decisions rendered February 27: one denied the right of the Board to require the Fansteel Metallurgical Corporation to re-employ a group of strikers who had seized the premises of the Corporation in North Chicago; another rejected the Board's ruling against the Columbian Enameling and Stamping Co., of Terre Haute, that the company had not bargained collectively with striking employees and must on account of this failure reinstate them; the third found invalid the Board's order against the Sands Manufacturing Co., of Cleveland, and found faulty the Board's evidence that the company had discriminated against members of a union and refused to deal with them. Among decisions in favor of regulation of labor, two were delivered December 4: the course of the NLRB was upheld in its requirement that an independent union of employees of the Newport News Shipbuilding and Dry Dock Co., judged to have been operated as a company union before but not after the establishment of the Labor Act, should be disestablished; and with regard to an appeal of the Chicago Rock Island and Pacific Railroad, the Interstate Commerce Commission was held to have the authority to make its approval of a consolidation conditional on the company's agreeing to protect 69 employees affected thereby.

Dealing with the control of agriculture, decisions of the Court held: that distributors and handlers of milk in the Chicago area could be prosecuted under anti-monopoly laws, other existing acts not giving dealers in agricultural commodities immunity thereto (December 4); that the second Agricultural Adjustment Act (that of Feb. 16, 1938), impugned by certain growers of flue-cured tobacco, effected a proper exercise of the constitutional power to regulate interstate commerce, as to its compulsory restriction of growers' sales, and was therefore valid in such restriction—Chief Justice Hughes, who had concurred in the decision overthrowing the first Agricultural Adjustment Act, concurring likewise in the new decision (April 17); that Secretary of Agriculture Wallace, having started new proceedings, in place of those condemned by the Court in 1938, to commission agents in the Kansas City Stockyards, might go on with these proceedings before disposing of the \$586,000 claimed by the agents (May 15).

A decision rendered March 27 discarded the

doctrine, previously followed for generations, that neither the United States nor a State might tax the salaries of the other's employees. Rendered in the case of an attorney for the Home Owners' Loan Corporation, James B. O'Keefe, who sought the return of a payment of income tax made to the State of New York, the decision favored the contention of the Federal Government, which intervened to support the right of a State to tax a Federal salary; the order of the lower court, the New York Court of Appeals, that O'Keefe's payment must be returned, was reversed; the opinion, by Stone, supported by five other Justices, and opposed by only McReynolds and Butler, found faulty the hitherto guiding decision of the Supreme Court, made 68 years before in the case of Collector vs. Day. Another decision as to taxation (November 6) denied the right of a firm, the Glenn L. Martin Co., performing a contract for the Government, to include in costs allowed in its contract its payments of taxes for Social-Security purposes. But Maryland, in another decision (November 6 also), was not allowed to collect a tax for recording mortgages of the Home Owners' Loan Corporation.

Among important decisions affecting the rights of persons were: that on the reorganization of the Los Angeles Lumber Products Co., Ltd., denying to so-called equity-holders, such as stockholders, a right to an equity in a corporation reorganizing under Section 77b of the Federal Bankruptcy Act of 1934, except in case that assets should more than suffice to satisfy fully the claims of creditors and holders of prior securities (November 6); that invalidating municipal ordinances of Los Angeles, Milwaukee, Worcester, Mass., and Irvington, N. J., to prohibit or control the distribution of handbills, on such grounds as the prevention of litter in the streets or of canvassing (November 22); and that nullifying an order of the Secretary of Labor, for the deportation of an alleged Communist, Joseph G. Strecker of Hot Springs, Ark., in accordance with a statute of 1918 for deporting aliens belonging to bodies advocating the forcible overthrow of the Government, the Court holding by 6 to 2 that the act applied only to one still a member of such an organization (April 17).

In matters affecting individual States, some of the more notable decisions were that reversing a decision of the Supreme Court of Pennsylvania and affirming the application of that State's law regulating the dealers in milk to Eisenberg Farms Products, a concern maintaining that while it bought milk from farmers in Pennsylvania it resold solely outside the State (February 27); that upholding Michigan's retaliatory law to prohibit the importation of beer from Indiana, where an act of 1935 restricted dealers' bringing beer into Indiana (January 3); and that in a contest among Massachusetts, Texas, New York, and Florida, establishing Massachusetts alone as the domicile of the late Edward H. R. Green (son of Hetty Green) and thus enabling this State to levy about \$5,000,000 on his estate.

In the litigation of the "fourteen utility companies" to have the Tennessee Valley Authority Act declared unconstitutional, the Court (January 30) avoided pronouncing on constitutionality but dismissed the action (January 30) on the ground that the companies lacked the right to bring the matter before it, denying them the right of immunity to competition from any quarter; the ruling had the effect of removing the legal op-

position of the most-affected private interests to the prosecution of the further Federal plans for developing waterworks for the generation of electricity. In the Government's prosecution of the American Medical Association as a monopoly in restraint of trade, the Court dismissed (October 23) a motion of the Government to bring appeal directly to the Supreme Court, from the District of Columbia's District Court, which had found the Association not a monopoly, for the reason that the medical profession was not engaged in trade; the disposal simply changed the procedure to the extent of rerouting the appeal from the decision in first instance into the normal course, a proceeding in the Circuit Court.

For decisions in other courts, see **COURTS, FEDERAL**; also, **DAIRYING**; **LAW**; **NATIONAL LABOR RELATIONS BOARD**.

SURETY BONDING. See **INSURANCE**.

SURGEONS, AMERICAN COLLEGE OF. A college or guild (not a teaching institution) organized in 1913 by some 500 surgeons of North America to elevate the standard of surgery. Fellowships in the organization are granted on the basis of merit only, with reference to professional ability and moral and ethical fitness. In 1939 these numbered approximately 12,800.

The college's twenty-ninth annual congress was held in Philadelphia, Pa., Oct. 16-20, 1939, with an attendance of 3000 surgeons. The organization's official journal is *Surgery, Gynecology, and Obstetrics*.

The officers for 1939-40 were: President, George P. Muller, Philadelphia; first vice-president, Henry W. Cave, New York; second vice-president, D. Edwin Robertson, Toronto; treasurer, Dallas B. Phemister, Chicago; secretary, Frederic A. Besley, Waukegan, Ill. Officers-elect: President, Everts A. Graham, St. Louis; first vice president, Oliver S. Waugh, Winnipeg; second vice president, Albert O. Singleton, Galveston. The Board of Regents consisted of Irvin Abell, Louisville, chairman; Arthur W. Allen, Boston, vice-chairman; Frederick A. Coller, Ann Arbor; George Crile, Cleveland; William Darach, New York; John R. Fraser, Montreal; W. Edward Gallie, Toronto; Harry S. Gradle, Chicago; John E. Jennings, Brooklyn; James Monroe Mason, Birmingham; George P. Muller, Philadelphia; Alexander R. Munroe, Edmonton; Howard C. Naffziger, San Francisco; Alton Ochsner, New Orleans; Arthur M. Shipley, Baltimore, and Gilbert J. Thomas, Minneapolis.

Since the death of Dr. Franklin H. Martin, the directorship is invested in an Executive Committee, consisting of Dr. Irvin Abell, chairman, and Drs. Arthur W. Allen, John R. Fraser, Harry S. Gradle, George Crile, George P. Muller (ex officio), Howard C. Naffziger, Dr. Malcolm T. MacEachern and Dr. Bowman C. Crowell are associate directors and Dr. Harold Earnheart, and Dr. E. W. Williamson are assistant directors. Headquarters are at 40 East Erie St., Chicago, Ill.

SURGERY. See **MEDICINE AND SURGERY**.

SURINAM, sōō'ri-nām' (NETHERLANDS GUIANA). A colony of the Netherlands, in northern South America. Area, 54,291 square miles; population (1938 estimate), 171,000. During 1937 there were 4524 births and 1854 deaths. The 122 public and private schools had a total of 21,851 pupils. Paramaribo, the capital, had 52,368 inhabitants in 1938.

Production and Trade. Besides sugar (20,160 short tons, 1939), the chief products in metric

tons are: Coffee (4000 in 1939); rice (35,400 in 1938); maize (2000 in 1937); bauxite (392,300 in 1937). Bananas, cacao, rum, molasses, gold (14,154 fine oz., 1938), and salt are other products. Livestock in the colony (1937) included 21,209 cattle, 2912 goats, 7109 pigs. In 1938 (in old U.S. gold \$) imports were valued at \$1,800,000; exports, \$1,900,000. During 1937, 409 vessels aggregating 489,218 register tons cleared the ports.

Government. For 1939 local revenue was estimated at 4,035,000 florins, the State subvention was 2,780,000 florins; expenditure, 6,815,000 florins. (Florin averaged \$0.5334 in 1939). A governor heads the colony and he is aided by an advisory council of five members (the governor as president, a vice-president, and three others) all nominated by the Queen of the Netherlands. The representative body of the colony is the Colonial States, which is made up of 13 members elected for six years. Governor, Prof. Dr. J. C. Kielstra (appointed Aug. 13, 1933).

SUSPENSION BRIDGES. See **BRIDGES**.

SVALBARD, sväl'bär. An archipelago owned by Norway, comprising West Spitsbergen, North East Land, Prince Charles Foreland, Edge Island, Bear Island, and adjacent islands. Total area, 24,294 square miles; population (wintering force in 1938-39), 2316. Capital, Longyearbyen. Coal (626,516 tons, 1938) is the chief product. The budget for the fiscal year 1940 was balanced at 254,050 kroner (krone averaged \$0.2457 in 1938).

SWANSON, CLAUDE AUGUSTUS. An American cabinet officer, died in Rapidan, Va., July 7, 1939. He was born in Swansenville, Va., Mar. 31, 1862, and educated at Randolph Macon College (A.B., 1885) and the University of Virginia (LL.B., 1886). He engaged in the practice of law in Chattanooga, and in 1893 was elected to the House of Representatives, where he served as a member of the Ways and Means Committee. In 1905 he was elected Governor of Virginia, serving until 1910 when he resigned to accept appointment as a U.S. Senator from Virginia to fill the unexpired term of John W. Daniel. On Mar. 4, 1911, he was reappointed, and at the meeting of the General Assembly of the State he was elected for the term ending in 1917. Mr. Swanson was re-elected to serve in that body until 1937.

His career in the Senate was marked by his chairmanship of the Senate Committee on Naval Affairs (1918-33) and by the fact that he was ranking Democrat on the Senate Committee on Foreign Relations. He was a leader in the movement to build up the Navy to a strength equal to any other power, and during the Wilson Administration he was instrumental in putting through Congress the President's big naval program. He advocated American adherence to the League of Nations and membership in the World Court and was one of Wilson's strongest supporters in these causes. His ranking membership in the Foreign Relations Committee led to his appointment as an American delegate to the Disarmament Conference at Geneva in 1932.

On Mar. 4, 1933, Swanson resigned from the Senate to accept the appointment of Secretary of the Navy in the cabinet of President Roosevelt. A "strong navy" man, he entered upon his duties when American naval construction was at its lowest ebb, but during his regime an armada costing more than \$1,500,000,000 was put under construction—an unparalleled peacetime expansion of the American navy. He was an advocate of a

planned program of expansion in opposition to the usual sporadic building, claiming the latter to be costly and inefficient.

SWARTHMORE COLLEGE. A nonsectarian coeducational institution for higher education in Swarthmore, Pa., founded in 1864 by the Society of Friends. The 1939-40 enrollment was 739. The teaching staff numbered 106. The total endowment was \$7,800,000, and the income for the year was \$934,800. The library contained 115,000 volumes. President, Frank Aydelotte, LL.D.

SWAZILAND, swā'zē-lānd. A British protectorate in South Africa. Area, 6704 square miles; population (1936 census), 156,715, including 153,270 Bantu (natives), 2740 Europeans, and 705 colored (other than Bantu). Capital, Mbabane.

Production. The chief agricultural crops are maize, tobacco, groundnuts, cotton, and millet. In 1938 there were 403,000 cattle, 136,000 sheep and goats, and 1700 horses. Large numbers of sheep are brought from the Transvaal each year for winter grazing. In 1938, 1246 fine ounces of gold and 174 long tons of tin were produced. Swaziland is considered a part of the Union of South Africa for customs purposes. It received £20,508 as its share of customs revenue for the year ending Mar. 31, 1938. No statistics for imports and exports are kept.

Government. For the year ended Mar. 31, 1938, ordinary revenue totaled £119,288; expenditure, £151,320. The government is administered by a resident commissioner under the British High Commissioner for South Africa. Resident Commissioner, Charles L. Bruton (appointed Nov. 2, 1937). See SOUTH AFRICA, UNION OF, under *History*.

SWEDEN. A constitutional monarchy of Scandinavia. Capital, Stockholm. Sovereign in 1939, Gustav V, who succeeded to the throne on Dec. 8, 1907.

Area and Population. Sweden has an area of 173,341 square miles (land area, 158,394) and a population estimated at 6,310,214 on Jan. 1, 1939 (6,142,191 at the 1930 census). The urban population in 1938 was 2,278,413. Live births in 1938 numbered 93,499 (14.9 per 1000); deaths, 72,577 (11.5 per 1000); marriages, 56,725 (9.0 per 1000). Estimated populations of the chief cities on Jan. 1, 1939, were: Stockholm, 570,771; Göteborg, 275,763; Malmö, 151,247; Norrköping, 69,434; Helsingborg, 61,365.

National Defense. Military service is compulsory. On Nov. 1, 1939, the army consisted of 100,000 active soldiers and 525,000 trained reserves, according to the Adjutant General's Office, Washington, D. C. The air force comprised 1000 men and 260 aircraft. The country maintained 8 coast defense ships, 2 cruisers, 14 destroyers, 31 torpedo boats, 6 mine-sweepers, 14 submarines, 1 minelayer, besides depot ships, training ships, and small craft. See *History* below.

Education and Religion. Schooling is compulsory and there is practically no illiteracy. Of 761,287 children of school age (7 to 14 years) in 1936, 666,060 were attending elementary schools. In 1938-39 there were 36,560 students in government high schools and 12,855 in universities. The Lutheran Protestant Church, to which 6,124,490 persons adhered in 1930, is recognized as the state church. There were also 6653 Jews, 4763 Roman Catholics, 3981 Methodists, 805 Baptists, and 1499 others.

Production. About one-half of the working population is engaged in agriculture and the remain-

der chiefly in fishing, lumbering, manufacturing, and commerce. In 1937 there were 9,284,000 acres of arable land; 2,696,000 acres of meadows and pastures; 54,962,000 acres of woods and forests. The value of field crops in 1938 was 1,140,427,000 crowns (kronor), compared with 1,183,206,000 in 1937. Yields of the chief cereals in 1939 (in metric tons) were: Wheat, 855,700; barley, 234,400; rye, 387,700; oats, 1,279,100. The harvest of other crops in 1938 was: Mixed grain, 664,000 metric tons; potatoes, 68,803,000 bu.; sugar beets, 1,833,000 metric tons; beet sugar (1938-39), 292,000 metric tons; sown hay, 5,339,000 metric tons; forage roots, 2,568,000 metric tons. Wood pulp (chemical) production in 1938 was 2,390,000 metric tons. In July, 1938, there were 3,036,000 cattle; 1,371,000 swine; 617,000 horses; 406,000 sheep.

The major industrial products in 1938 (in metric tons unless other wise specified) were: Iron ore, 8,500,000; pig iron, 714,000; steel (ingots and castings), 972,000; coal, 431,000; copper ore, 9300; zinc, 34,600; lead, 8600; aluminum, 1900; manganese, 2100; pyrites, 186,000; tungsten, 110; margarine, 59,000; wool and mohair, 600; rayon, 7961; silver, 1,040,000 fine oz.; gold, 197,984 fine oz.; beer, 41,950,000 gal.; alcohol, 11,914,000 gal.; electricity, 8,150,000 kilowatt-hours; paper, 979,000 metric tons in 1937.

Foreign Trade. Merchandise imports in 1939 were valued at 2,489,000,000 crowns (2,081,700,000 in 1938) and exports at 1,879,000,000 (1,843,300,000 in 1938). Principal exports were iron and steel, machinery, paper, wood, and cork. In 1938 the exports were distributed chiefly as follows (in crowns): Great Britain and Ireland, 446,915,000; Germany, 328,779,000; United States, 165,785,000; Norway, 124,927,000; Denmark, 87,883,000; Finland, 86,437,000. Of the imports (valued in crowns), Germany supplied 480,940,000; Great Britain and Ireland, 376,319,000; United States, 336,749,000; Denmark, 118,070,000; the Netherlands, 114,794,000. See IMPORTS AND EXPORTS.

Finance. Budget estimates for the fiscal year ended June 30, 1940, placed total revenues at 1,283,314,000 crowns (1,153,438,000 in 1939) and expenditures at 1,340,468,000 crowns (1,191,966,000 in 1939). A supplementary budget of 553,000,000 crowns, to cover expenditures necessitated by the European war, was introduced in the legislature in September, 1939. The public debt on Aug. 31, 1939, was 2,701,375,701 crowns. After having been linked to the pound sterling since 1933, the Swedish crown was cut loose on Aug. 28, 1939. The average exchange value of the Swedish crown (krona) was \$0.2520 in 1938 and \$0.2399 in 1939.

Transportation. With 10,381 miles of line, the state and private railways in 1937 carried 79,993,000 passengers and 46,067,000 metric tons of freight, gross receipts totaling 373,534,000 crowns. Motor highways extended 53,285 miles in 1939 (see ROADS AND STREETS). Civil aviation statistics for 1938 were: Miles flown, 1,686,724; passengers carried, 60,046; mail, 1,577,297 lb.; baggage and freight, 2,234,402 lb. The merchant marine on Jan. 1, 1939, comprised 2275 ships of 1,600,000 gross tons. During 1938, 18,600,000 net registered tons of shipping entered Swedish ports in the international trade. Gross earnings of the Swedish merchant marine were estimated at 357,500,000 crowns in 1938.

Government. The limited monarchy rests on the Constitution of 1809, since modified, fixing the authority of the hereditary King and of the elected Diet, or Riksdag. The King's supreme executive

and judicial authority is exercised through a council of ministers, who depend on the support of the Riksdag. The Riksdag is bicameral. Its First Chamber in 1939 had 150 members; about one-eighth are elected each year, for terms of eight years, according to districts, by vote of municipal and provincial councils. The Second Chamber had 230 members, elected quadrennially from 28 constituencies by the male and female subjects not under 23 years of age. The more powerful Second Chamber was controlled, after the election of 1936, by a Social-Democratic majority. Premier, Per Albin Hansson (Social Democrat).

History. Sweden prospered in the early months and summer of 1939. Iron ore, pig iron, and steel were exported to meet a high demand elsewhere in Europe. The market for timber and products of wood recovered much of the ground lost in 1938. Private building was active, work created by the government was more than normally abundant, and banks were well supplied with liquid capital. The fiscal year ending with June 30, 1939, left the government with an unexpended surplus of 46,160,000 crowns after ordinary current expenditure. A project taken up early in the year provided a highway 72 feet wide to connect the cities of Stockholm and Gothenburg. Legislation was passed to transfer to the government, in the course of five years, all railroads that remained in private possession. The union holding about four-fifths of the wage-earners signed with an association of about 4500 employers an agreement on procedure in their future disputes, designed to reduce the hardship that such disputes might cause to the rest of the people. Thus in many ways Sweden had reason to feel better off than the greater part of Europe.

The beginning of the war between Germany and the Franco-British alliance brought Sweden most of the risks and difficulties that it caused to Europe's other minor maritime neutrals. These fell on Sweden, in most cases, with less severity than on the others. The hostilities at sea inflicted a fairly severe loss on Swedish merchant shipping, 19 vessels, aggregating 34,629 gross tons, having been destroyed, according to *Lloyd's List* of Dec. 28, 1939; but Swedish yards had launched 166,600 tons of ships in 1938. The trouble attending the movement of goods by sea caused the government to create, early in September, a shipping board and, by this agency, to limit ships' voyages by a system of permits. It became necessary by November to limit numerous exports by license. The most evident shortage in domestic supplies, that of fuel for automobiles, necessitated decrees shutting down the internal services by airplane and forbidding private use of automobiles except by special permission.

The government's relations with the belligerents had the benefit of two circumstances: Sweden was not the immediate neighbor of a belligerent in the war against Germany; and Germany and Great Britain competed as buyers of Swedish ore and ferrous products. Sweden proclaimed neutrality on September 1. It limited the use of its ports by belligerent warships (essentially German), in a decree of September 8. Later a special session of the Riksdag appropriated about 500,000,000 crowns for expenditure on national defense and other needs brought by the war. Toward repaying this sum it voted, December 20, a special "defense tax," at the rate of 50 per cent of the taxes on income and on property levied for 1939.

Sweden's situation of relative security was trans-

formed suddenly, before the end of the year, into one of perplexity, of conflicting motives and of peril. Russia began on November 30 its independent attack on Finland (q.v.), a country that formerly had long formed part of Sweden, that bordered it, and whose people were in close cultural contact with the Swedes. While this attack still threatened, the kings of Sweden, Denmark, and Norway and President Kallio of Finland met at Stockholm, October 18-19, and decided that the three monarchies would make diplomatic representations to Russia on Finland's behalf. No agreement among the four was said to have been reached as to any joint military effort to defend Finland. Later, as the Russian invasion developed, Sweden permitted shipments of supplies to Finland, allowed subscriptions of money to aid the distressed in that country, and offered no barrier to the passage of Swedes and others to Finland to volunteer for service in its army. Sums collected on behalf of the Finns attained about 6,000,000 crowns by December 28.

Foreign Minister Rickard J. Sandler, without proposing military support for Finland, urged in November that Sweden use its forces to defend the Åland Islands. These islands, extending partly across the outlet of the Gulf of Bothnia, were under Finland's government, but many of their inhabitants were Swedish in language and origin. Sandler's proposal rested on the view that Russia, if it gained these islands, would dominate a great part of the Swedish coast. Sandler's proposal met with severe criticism in the German press, an indication that the German authorities sought to discourage a policy likely to bring Sweden into war with Russia. There followed the acceptance of Sandler's resignation from the cabinet, December 11. Hansson, continuing as Premier, chose Christian E. Guenther as Foreign Minister and made other changes. The policy of non-interference in Finland now became firmly fixed. Strong and widespread feelings of sympathy for the Finns and the dread of a Russian advance made this policy far from universally acceptable and tended to develop organized popular agitation for giving Finland military support; but relations with Germany promptly improved, and the conclusion of negotiations for a new German trade agreement was reported in the closing days of the year.

See BRIDGES; COMMUNISM; CHEMISTRY, INDUSTRIAL; MILITARY PROGRESS; NAVAL PROGRESS.

SWEDISH LITERATURE. See SCANDINAVIAN LITERATURE.

SWIMMING. See SPORTS.

SWITZERLAND. A federated republic of central Europe. Capital, Bern (Berne).

Area and Population. Switzerland has an area of 15,944 square miles and a population estimated at 4,210,000 on Jan. 1, 1939 (4,066,400 at the 1930 census). The urban population in 1937 was estimated at 1,760,000. Living births in 1938 numbered 63,790 (15.2 per 1000); deaths, 48,576 (11.6 per 1000); marriages, 31,031 (7.4 per 1000). Estimated populations of the chief cities on Jan. 1, 1939, were: Zurich, 329,780; Basel, 162,559; Geneva, 123,286; Bern, 121,976; Lausanne, 89,632; St. Gallen, 63,491; Winterthur, 58,410; Lucerne, 54,123. The 1930 census showed 2,924,313 German-speaking Swiss; 831,097 French-speaking; 242,034 Italian-speaking; and 44,158 Romansch-speaking.

National Defense. Military service is compulsory. On Nov. 1, 1939, the army consisted of 480,000 active soldiers and 100,000 trained reserves, according to the Adjutant General's Office, Wash-

ington, D. C. The air force comprised 5000 men and 400 aircraft.

Education and Religion. There is no illiteracy among persons over ten years of age. Enrollment in the schools in 1936-37 was: Primary, 471,430; secondary and preparatory, 89,235; manual arts instruction, 29,053; university (1937-38), 10,981. About 57 per cent of the Swiss people are Protestants, 41 per cent Roman Catholics, and 0.4 per cent Jews.

Production. Approximately 45 per cent of the working population is engaged in industry, 21 per cent in agriculture, and 15 per cent in commerce. About 12 per cent of the total area is arable and there are some 4,161,000 acres of meadow and 2,372,000 acres of forests. The value of agricultural production in 1937 was 1,247,000,000 Swiss francs, derived as follows (in million francs): Cereal grains, 75.7; potatoes, 33.4; vineyards, 44.4; fruit culture, 82.6; vegetable culture, 66.0; cattle for slaughter, 207.2; horses, 19.5; hogs, 162.0; poultry, 59.2; milk and milk products, 457.9; other agricultural products, 39.2. Livestock statistics for 1938 showed 1,701,000 cattle; 923,000 swine; 140,000 horses (1936); 176,000 sheep (1936); 220,000 goats (1936); 5,594,000 poultry (1936).

The output of hydro-electric energy in year ending Sept. 30, 1938, was 7,400,000,000 kilowatt-hours. Other industrial production (during the 1938 calendar year) was: Beer, 56,600,000 gal.; watchcases, 584,000; silk (conditioned), 802,000 lb.; manufactured gas, 261,000,000 cu. meters; salt, 81,100 metric tons. There were in 1938 about 19,875 textile looms and 1,249,000 cotton spindles. The hotel industry in 1938 had 3,485,000 patrons (3,578,000 in 1937).

Foreign Trade. Total imports in 1938 were valued at 1,606,902,000 Swiss francs and exports at 1,316,572,000. In 1939 imports of merchandise were 1,888,800,000 francs; exports of Swiss products, 1,297,200,000 francs. Manufactures accounted for 87.6 per cent of all 1938 exports. Exports (valued in francs) were chiefly consigned to the following countries: Germany, 206,143,000; United Kingdom, 148,083,000; France, 121,406,000; Italy, 91,199,000; United States, 90,738,000. Of the imports (valued in francs), Germany supplied 373,083,000; France, 229,182,000; United States, 125,257,000; Italy, 116,669,000; United Kingdom, 95,021,000. See IMPORTS AND EXPORTS.

Finance. Government revenue for 1939 was estimated at 524,800,000 francs; expenditure at 580,800,000 francs. Actual receipts in 1938 totaled 539,005,000 francs (522,068,000 in 1937); expenditures, 578,011,000 (537,009,000 in 1937). The public debt on Jan. 1, 1939, was 2,753,300,000 francs, of which 1,950,100,000 was funded and 803,200,000 was floating. The average exchange value of the Swiss franc was \$0.2287 in 1938 and \$0.2253 in 1939.

Transportation. There were in 1937 about 3660 miles of railway (2800 miles electrified) and (in 1939) 10,448 miles of highways (see ROADS AND STREETS). Civil aviation statistics for 1938 were: Miles flown, 3,354,530; mail carried, 1,386,489 lb.; freight and baggage, 1,338,201 lb.

Government. The Constitution of 1874, the basis of the government, provides a republican confederation of 22 cantons or states. The Federal Assembly consists of two chambers; one, the Council of States, is composed of 44 members—two from each canton; the other chamber, the National Council, has 187 members, all elected quadrennially by the obligatory vote of males and females

who have attained 20 years of age. The Federal Council consists of seven members, all elected quadrennially by vote of the united chambers of the Federal Assembly; by similar vote, but annually, are chosen, from among the seven, a President of the Confederation and a Vice-President of the Federal Council. Each of the Federal Council's seven members is assigned to the direction of one of the seven Federal administrative departments. Philippe Etter was President in 1939; Dr. Marcel Pilet-Golaz was elected in 1939, to be President in 1940.

History. The violent disturbance among the greater powers of Europe in 1939 imperiled the bases of Switzerland existence—threatened the integrity of her soil, the concord of her people, the ingress for her food, and the outgo of her products. The peril at hand dictated the course of public policy to such a degree that most other considerations dropped out of the immediate reckoning.

The risk of military invasion had led the Swiss to take unusual military precautions prior to 1939 (see YEAR BOOK, 1938, p. 715). These were steadily augmented in 1939. In January the Federal Assembly passed a law to lengthen the term of obligatory military service. In April 20,000,000 francs were voted to build a long-needed road to connect central Switzerland with Graubunden (Grisons); dispute over the question whether to follow the best military or best commercial route had delayed the decision on this road for years, but now the military route, that through Kisten Pass, was adopted.

On August 28 the government ordered the mobilization of about 100,000 men to cover the threatened frontiers; on the 30th the Assembly voted plenary powers to the Federal Council, elected Col. Henri Guisan to the rank of general (the fourth to hold this exceptional rank in the Swiss army since 1848), and made him commander in chief. On September 1 the general mobilization of the army, involving about 500,000 men in all, was ordered. By the time that war between neighboring Germany and France was declared, Swiss mobilization was well under way. Starting with October, the release of a considerable part of the mobilized force was effected in the autumn. In December a plan was adopted for organizing a fourth corps in the Swiss army, with a view to improve its ability to act on a larger scale. The way was laid in April for the slower process of increasing the nation's defensive works and material; the Federal Council approved the expenditure of 190,000,000 francs for aircraft, anti-aircraft defenses, forts, cannon, and related material.

Swiss authorities declared, June 8, that they had discovered evidence of a separatist movement in the mainly Italian-speaking Canton of Ticino and had seized 10,000 proclamations calling on the population to secede and unite with Italy. Soon afterward the Italian Government, in pursuing its plan of purging Bolzano in the South Tirol of non-Italian elements, sought in July the removal of the 200 or more Swiss in the area; some of these were hotel-keepers, and the requirement that they leave without taking out any considerable sum in money left them without much hope of material compensation for loss incurred; the matter was a subject of diplomatic action on the part of Switzerland. When the war broke out six weeks later a part of the Swiss army just mobilized was sent to protect the Italian frontier, and it was kept there until the approach of winter

made trouble in that quarter unlikely. A small number of persons alleged to have acted as Italian spies were arrested in October. The pro-German Swiss Nazis, who had been active in 1938, abandoned overt operations as the war developed; they abstained from the October elections to the National Council.

The neighboring war made a battle-front of the Rhine along the whole eastern edge of Alsace. It thus interrupted in September the transportation of heavy goods from the seaboard to Switzerland by water. Great quantities of wheat, fodder, and other merchandise on the way were stalled at seaboard and along the river. Fortunately the efforts of the Swiss Government to accumulate food had been progressing for a year. It was announced that more than a year's supply of breadstuffs lay in storage within the country. Partly to help renew the supply before it should run out and partly to help the exportation of Swiss products, the government chartered a fleet of ten ships (expectedly 15 by the end of 1939) from a Greek firm, to carry Swiss commerce, connecting via either Atlantic or Mediterranean ports. The government warned the population in April to gather stores of a list of the common readily preserved table supplies, such as sugar and rice. In September it was consequently able to check disturbance in the market for such goods, and restrictions on the sale of foodstuffs went into effect without serious difficulty. Imports and exports, likewise were put under strict regulation. The national hoard of gold, was reported as early as March to have been mainly removed to London and New York and—as for the required 40 per cent to be kept on hand as currency-coverage—put in hiding.

Elections. The members of the National Council, for the next four years, were elected by the popular vote, October 28-29. The voters gave a heavy majority for the conservative candidates. On June 4 in a popular referendum the voters adopted, by a majority of more than 2 to 1, a constitutional amendment, previously voted by the Federal Assembly, allowing a tax on retail sales, at rates mainly from 2 to 4 per cent, toward producing 330,000,000 francs to meet expenses due to the cost of measures of national defense.

See FAIRS AND EXPOSITIONS, MILITARY PROGRESS.

SYNDICALISM. See SPAIN under *History*.

SYPHILIS. See MEDICINE AND SURGERY.

SYRACUSE UNIVERSITY. A nonsectarian institution of higher learning for men and women in Syracuse, N. Y., founded in 1870. The 1939 autumn enrollment was 6641. The summer session had an attendance of 2368. The faculty numbered 673. The productive funds amounted to \$4,706,432, while the income for the year was \$4,003,528. The library contained 260,801 volumes. Chancellor, William Pratt Graham, Ph.D.

SYRIA AND LEBANON. A mandated territory of France on the east coast of the Mediterranean between Turkey and Palestine. Beyrouth (Beirut) is the administrative center of the French High Commissioner, Gabriel Puaux, who assumed office Jan. 7, 1939.

Area and Population. The area and population of the Syrian Republic, its sub-divisions, and the Republic of Lebanon, are shown in the accompanying table. It excludes the Sanjak of Alexandretta (Hatay Republic), with an area of 1930 square miles (pop. about 228,000) ceded to Turkey by France June 23, 1939.

The people are mainly Arabs and Arabic is

the chief language, but there are considerable numbers of Turks, Kurds, Turkomans, Circassians, Armenians, Iranians, and Jews as well as about 28,000 Europeans. The chief cities, with 1935 populations, are: Damascus, 193,912; Aleppo, 177,313; Beyrouth, 134,655; Homs, 52,792.

SYRIA AND LEBANON: AREA AND POPULATION¹

Political Unit (Capital)	Area, sq. mi. *	Popula- tion ^b
Republic of Syria (Damascus).....	72,560	2,487,000
<i>Syria Proper</i> (Damascus).....	67,550	2,044,000
<i>Latakia (Latakia)</i>	2,310	372,000
<i>Djebel Druse (El Suweideh)</i>	2,700	71,000*
Republic of Lebanon (Beyrouth).....	3,470	862,600
Total.....	76,030	3,349,600

* Approximate. ^b Estimates of December, 1938, for the Republic of Syria and its subdivisions; census of 1935 for Republic of Lebanon. * Excluding about 15,000 nomads who spend part of their time in Djebel Druse.

Education and Religion. Statistics on education (1937): Primary, 2611 schools (253,763 pupils); technical, 146 (15,916); secondary, 31 (1485); universities, 3 (1316). Religions: Moslems, 1,514,755; Christians, 505,419; Alawites, 27,930; Druses, 86,125; Jews, 16,526; Ismailians, 14,882.

Defense. The French-controlled army of occupation on Jan. 1, 1938, comprised 10,476 officers and men, of whom only 303 were Frenchmen.

Production. Agriculture and livestock raising are the principal occupations. Production in 1938 (metric tons): Wheat, 659,400; barley, 385,200; oats, 10,000; corn, 27,500; rice, 3000; potatoes, 41,600; tobacco, 3400; cotton-seed, 17,600; sesame, 5300; olive oil, 15,300; cotton, 8400; wool and mohair, 9900; raw silk, 140. Wine production (1938-39) was 43,000 hectoliters (hectoliter equals 26.42 U.S. gal.). Figs, apricots and citrus fruits are widely grown. Livestock (Jan. 1, 1938): 2,273,520 sheep, 89,900 camels, 345,228 oxen, 152,221 asses, 1,659,514 goats. Some flour, soap, olive oil and silk thread are manufactured.

Foreign Trade. Merchandise imports in 1938 were valued at 70,812,000 Syrian pounds (53,604,000 in 1937); exports, 29,280,000 (25,716,000). Textiles and animal and vegetable products are the chief articles of trade. Commerce is mainly with France, Britain, United States and neighboring countries. During 1938 2,082,122 metric tons of oil was piped through Syria to the port of Tripoli from Iraq.

Finance. Budget results for both the Syrian and Lebanese Governments (1938) were: Receipts, 17,232,042 Syrian pounds; expenditures, 16,497,303. The so-called "Common Interests" budget returns were: Receipts, 12,237,189 Syrian pounds; expenditures, 9,085,282. The Syrian pound (equal to 20 French francs) exchanged at \$0.576 in 1938 and \$0.81 in 1937.

Communications. The mandated territory had 890 miles of railway in 1938, 7072 miles of roads, air connections with France and Palestine, and bus connections between Beyrouth and Baghdad, Iraq. Beyrouth is the chief port. Shipping entered at all ports in 1937 totaled 1757 vessels of 4,074,000 tons. See ROADS AND STREETS.

Government. By the Constitution of May 14, 1930, the Syrian Republic achieved a virtually independent status, except that control of defense, foreign relations, and certain other functions was retained by France as the mandatory power. The Constitution provided for a legislature of 69 members elected for four years and a president

elected by the legislature for five years. President in 1939, Hashem Beg el Attassy, elected Dec. 21, 1936. The Constitution of the Lebanese Republic, dated 1926, was similar to that of the Syrian Republic. President, Emile Eddé, elected Jan. 20, 1936. Latakia and Djebel Druse, which are semi-autonomous districts of the Syrian Republic, were administered by French governors, assisted by partly nominated and partly elected councils. See *History*.

History. Relations between France and the Syrian Nationalists, politically the strongest group in the Syrian Republic, became exceedingly strained in 1939 as a result of two major developments. One was the refusal of the French Government to put into effect the Franco-Syrian treaty of 1936 (see 1936 YEAR BOOK) unless the pact was amended so as to continue French control of the army and police. The other was the cession of the Sanjak of Alexandretta (Hatay Republic) by France to Turkey under the Franco-Turkish mutual assistance pact signed June 23, 1939 (see FRANCE and TURKEY under *History*).

The treaties signed Sept. 9 and Nov. 13, 1936, by France with the Syrian and Lebanese Republics, respectively, provided for their establishment as independent republics, allied to France, at the end of a three-year transition period. Late in 1938 the French Parliament refused to ratify the treaties on the ground that the disturbed European situation made it inopportune for France to relinquish effective control of the mandate. When the French Government early in 1939 opened negotiations for amendment of the treaty, it met angry opposition from the Syrian Government and the Nationalist movement. Severe anti-French rioting in Damascus, Homs and other centres in March was repressed by troops, which on orders from Paris assumed all police powers. On March 14 the Nationalist leader Jamil Mardam Bey resigned as Premier of the Syrian Republic and his party refused further co-operation with the French regime. This resulted in a series of short-lived cabinets, each of which proved unable to act along lines satisfactory to both the French High Commissioner and the Nationalists.

The cession of the Sanjak of Alexandretta served further to enrage and alienate the Syrian Arabs. Turks comprised only about 40 per cent of the population of the sanjak, and the Arabs feared that Turkey would next move to seize additional parts of Syria. Moreover, as mandatory power the French had promised to see to it "that no part of the territory of Syria and Lebanon is ceded or leased or in any way placed under the control of a foreign power." This pledge was openly violated. On July 8 President Hashem Beg el Attassy and the cabinet resigned in protest. On the following day the French High Commissioner suspended the Constitution of the Syrian Republic and appointed a council to rule under his direction. Later the Lebanese Constitution was suspended. There was some Arab support for a reported French plan to establish a kingdom with the Emir Abdullah of Trans-Jordan on the throne. But this was opposed both by the Syrian Nationalists and by King Abdul Aziz ibn Saud of Saudi Arabia.

Before Turkey took full possession of Alexandretta late in July, thousands of Armenians and other minority groups in the Sanjak fled to Lebanon and Syria. Meanwhile the establishment of direct French rule ended the clashes that occurred in 1938 and early 1939 between the Syrian

government and certain Christian and Alawite minority groups opposed to Arab Moslem rule. With the outbreak of the European War in September, the anti-French agitation seemed to wane. Arab leaders announced their support of France and Britain and thousands of Arabs enlisted in the rapidly growing armed force that the French concentrated in Syria and Lebanon under Gen. Maxime Weygand during the remainder of the year.

TAHITI. See OCEANIA, FRENCH ESTABLISHMENTS IN.

TAIWAN. See FORMOSA.

TAJIK SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R., north of Afghanistan. It includes the Gorno-Badakhshan Autonomous Region (25,800 sq. mi.; capital, Khorog). Total area, 55,545 square miles; population (Jan. 17, 1939), 1,485,091. Chief towns (with 1936 populations): Stalinabad, the capital, 49,600; Leninabad, 67,700. In 1937 the 3853 primary and secondary schools had a total of 203,209 students. The main occupations of the people are farming, horticulture, and livestock raising. Cotton, rice, and vegetables are the chief crops. Deposits of petroleum, coal, lead, zinc, silver, and arsenic are being worked.

TANGANYIKA (tān'gān-yē'ka) **TERRITORY.** The former German East African area now administered by Great Britain under a mandate approved by the League of Nations. Area, 363,600 square miles; population (1938 estimate), 5,182,000 of whom 9165 were Europeans, as compared with (1931 census) 5,063,544 including 8217 Europeans. Chief seaports: Dar-es-Salaam, the capital (33,147 inhabitants), Tanga, Lindi, Mikindani and Kilwa. Mwanza and Bukoba are ports on Lake Victoria and Ujiji and Kigoma are ports on Lake Tanganyika.

Production and Trade. In 1939 the principal crops (with output in metric tons) were coffee (15,000), cotton (8600), groundnuts (5200), sesame (5300), cotton seed (27,300 in 1938), copra (5300 in 1938), and sisal (101,400 short tons exported in 1938). Other products are hides and skins, simsim, ghee, diamonds (3576 carats, 1938), gold (86,162 fine oz., 1938), and timber (pencil cedar, yellow wood, mvule, ebony). Livestock in the territory (1938): 5,052,207 cattle; 1,648,384 sheep; 2,827,766 goats. In 1938 imports totaled £3,448,575; exports, £4,050,734. Chief imports were machinery, cotton piece goods, foodstuffs, and motor vehicles. During 1938, 540 ships of 2,605,998 tons cleared the ports.

Government. For 1938 revenue totaled £2,113,294; expenditure, £2,223,896. In the budget for 1939, revenue was estimated at £2,161,000 and expenditure at £2,275,000. Tanganyika is administered by a governor who is aided by an executive council of 6 nominated members and a legislative council of 23 members (13 official and 10 non-official). Governor and Commander-in-Chief, Sir Mark Young (appointed Mar. 2, 1938).

History. Labor riots in the lighterage, railway, and public works services at the port of Tanga in August, 1939, resulted in the death of one striker and the wounding of another when police fired on a mob of several hundred persons. In June the government shipped foodstuffs to the Mbulu district of Tanganyika to combat famine conditions resulting from a two-year drought.

See SOUTH AFRICA under *History*.

TANGIER. An internationally administered seaport and surrounding territory in northwestern Africa adjoining Spanish Morocco near the Strait

of Gibraltar. Area, about 225 square miles; estimated population on Jan. 1, 1938, 80,000, mostly native Moslems but including some 17,000 Europeans and 7000 Jews. The city of Tangier proper has about 45,000 inhabitants. Commerce, agriculture, fishing, and the manufacture of cigarettes are the principal occupations. Wheat, barley, and chickpeas are leading crops. Imports in 1937 were 80,084,240 French francs; exports, 8,247,103 francs. A railway connects Tangier (city) with the French Moroccan railroad network. Modern harbor works are under construction at Tangier. Air lines connect Tangier with Toulouse, France, and with various North African cities.

Tangier was permanently neutralized and demilitarized by the Convention of Dec. 18, 1923, as modified by the protocol of July 25, 1928. For local government there is an international assembly of 27 members, whose acts are subject to the veto of a Committee of Control composed of the French, British, Spanish, and Italian consuls in the city. The assembly delegates administrative responsibility to an administrator, with three assistants in charge of finances, health, justice, etc. Government revenues for 1937 were estimated at 19,927,500 francs (excluding subsidies); expenditures, 25,082,822 francs. Native affairs are in the hands of a Mendoub, representing the Sultan of Morocco. Administrator in 1939, M. Le Fur; Mendoub, Si Mehemmed Et-Tazi. French, Spanish and Arabic are the official languages.

History. The port of Tangier resumed its pre-World War status as a center of international tension following the termination of the Spanish civil war (see SPAIN under *History*). In April the concentration of thousands of war-hardened troops in Spanish Morocco along the Tangier border and the visit of the German fleet to the port aroused Anglo-French fears that the Spanish dictator was contemplating seizing the port with German and Italian aid. To guard against this possibility a large French fleet was concentrated at nearby Gibraltar while the British Mediterranean fleet took up stations in the Eastern Mediterranean. The tension was dissipated when the German fleet returned to its home ports and General Franco assured Britain and France that he had no intention of disturbing the status quo in Tangier.

TANNU TUVA, *tân-nōō tōō-vā'*. An independent republic, organized under Russian auspices and enjoying the protection of the Soviet Union. Situated in Central Asia, it lies between Siberia and Outer Mongolia (of which it formerly was the northwestern corner). Area, about 64,000 square miles; population, estimated at 65,000 (50,000 Tuvians, 12,000 Russians, 3000 Chinese and Mongols). Capital, Kizilkhoto (Krasny in Russian), with about 10,000 inhabitants. The natives are mainly pastoral. Animal products, gold, and asbestos are the chief exports.

TARIFFS. See CUSTOMS, BUREAU OF; TRADE AGREEMENTS.

TASMANIA. An island State of Australia. Area, 26,215 square miles; population, exclusive of full-blood aboriginals, 238,061 (Mar. 31, 1939, estimate), compared with 227,599 (1933 census). During 1938 there were 4907 births (20.82 per 1000); 2288 deaths (9.71 per 1000); and 2082 marriages (8.83 per 1000). The principal cities are Hobart (capital) with 63,150 inhabitants, including suburbs (Dec. 31, 1938); Launceston and suburbs, 32,820 (1937); Devonport, 5151 (1933).

Production. The chief agricultural products

are wheat (195,500 bu. in 1938-39 season), oats, peas, fruits, potatoes, hops, and hay. There were 2,500,000 sheep in 1939. Other livestock (1937): 254,812 cattle, 31,578 horses, 43,067 swine. The principal dairy products (1938) were butter, 11,997,323 lb.; cheese, 3,770,189 lb.; bacon and ham, 2,454,528 lb. Wool (greasy) produced during 1938-39 totaled 15,000,000 lb.

The estimated value of mineral production for 1938 was £A1,889,795, of which copper accounted for £A580,238; silver and lead, £A267,773; tin, £A244,037; gold, £A195,079; coal, £A61,991. In 1937-38, from 948 factories, with 13,170 employees (including working proprietors), the net value of production was £A5,445,094. (Australian £ averaged \$3.9394 for 1937 and \$3.8955 for 1938).

Government. For the year ended June 30, 1939, revenue totaled £A3,615,000; expenditure, £A3,641,000; public debt, £A26,367,000. The executive authority is vested in a governor, assisted by an executive council of responsible ministers who are also members of parliament. Parliament consists of a legislative council of 18 members elected for 6 years, and a house of assembly of 30 members elected by proportional representation for 3 years. Governor, Sir Ernest Clark (term expires Aug. 5, 1940); Premier, E. Dwyer-Gray (interim Premier after the death of A. G. Ogilvie, June 10, 1939, until Jan. 1, 1940; R. Cosgrove was elected in June, 1939, to become Premier on Jan. 1, 1940). See AUSTRALIA.

TATAR AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

TAXATION. The changes in the Federal tax laws effected during 1939 were generally favorable to taxpayers. While Congress was seeking to reduce Federal expenditures, it also endeavored to make taxation less burdensome without materially curtailing the yield to the Treasury. For the most part, these changes were effected, in the face of at least mild opposition from the Administration, on the initiative of the legislators themselves.

Federal Taxation. The Revenue Act of 1939, approved June 29, effected a number of changes in the statute that were favorable to corporate taxpayers. This tax law extended to corporations some of the concessions as regards imposts on capital gains that were granted individuals in the Revenue Act of 1938. The most important changes were the following:

1. The normal tax on corporate income exceeding \$25,000 was changed from a sliding scale of 16½ to 19 per cent to a flat 18 per cent, for years beginning Jan. 1, 1940, thus eliminating the last vestige of the undistributed profits tax principle.

2. Corporations having net operating losses in 1939 and thereafter could deduct them from profits earned in the two subsequent years.

3. Corporations were accorded the privilege of deducting losses on capital assets held over eighteen months from other income, instead of being limited to \$2,000 of net capital losses as previously. In this way, the capital gain and loss provisions of the Revenue Act were made similar for corporations and individuals.

4. Corporations showing gains from the retirement of debt at a discount prior to 1943 need not include them in taxable income.

5. All taxpayers who desire to use it were granted the authority to use the "last in, first out" method of inventory valuation.

The Treasury Department sought to offset the action of Congress in eliminating surtaxes on un-

distributed profits by tightening the administration of Section 102 of the Revenue Act, imposing punitive taxes upon the unreasonable retention of earnings by a corporation. New regulations issued in August made the failure to pay out 70 per cent of earnings as dividends *prima facie* evidence of unreasonable retention, unless other circumstances were held to justify such action. A number of corporations liberalized their dividend policies, especially where the cash position was strong, to avoid the threat of the imposition of the surtax under Section 102.

Several revisions were effected in the Social Security Act of interest to taxpayers. The tax on payrolls for unemployment insurance was frozen at 1 per cent, payable by employers and employes, for three additional years ending 1942. Beginning with 1943, the tax is to be 2 per cent. This is expected to save taxpayers \$275,000,000 yearly for the three years 1940-42, when the rate was to have been 1½ per cent under the original Social Security Act provisions. Payroll taxes for unemployment insurance are to be limited to the first \$3000 of compensation paid an employe beginning with 1940, which is expected to save employers some \$65,000,000 yearly. At the same time, the Social Security Act was amended to authorize reductions in unemployment insurance taxes under approved merit rating plans which are adopted by the individual States. The old-age pension scheme was broadened to include bank employes, seamen, and employed persons over 65 for the first time, which was expected to provide pensions for approximately 1,300,000 additional employes. Employers of such persons thus became subject to payroll taxes.

The yields from Federal income taxes for the fiscal years ended June 30, 1938, and 1939, compared as follows:

INCOME TAXES IN FISCAL YEARS 1938 AND 1939

[In millions of dollars]

	1938	1939	Change
Current corporation	1,145.6	963.3	-182.3
Current individual	1,189.0	937.4	-251.6
Back taxes	251.6	250.6	- 1.0
Excess-profits tax	36.6	27.1	- 9.5
Total income taxes	2,622.8	2,178.4	-444.4

State Taxation. Few major changes were made in state taxation during 1939, apart from increases in liquor imposts. The total yield of all State taxes for the year was \$3,836,000,000, which compared with \$3,894,000,000 in the preceding year. In addition, state liquor stores earned net profits for the year of \$60,497,000, which compared with \$58,639,000 in the preceding year.

New York State increased its liquor tax from \$1 to \$1.25 a gallon, in the face of widespread opposition from the industry, which argued that bootlegging was stimulated as a result. Eleven other States took similar action.

The imposition of discriminatory taxation upon chain stores was not extended during the year, and met checks in the courts. By the end of the year, 19 States had such taxes, bills to pass additional levies of this kind being defeated in a number of States. In Kentucky, the Court of Appeals again held the chain store tax unconstitutional on November 24. However, another bill to impose a graduated tax on chain enterprises that would meet the objections of the Kentucky Court of Appeals was introduced and passed shortly after the turn of the year. The Pennsylvania discriminatory chain store tax also was held invalid by the State

Supreme Court, and the Wisconsin chain store levy expired.

The imposition of taxation by States on commodities crossing State lines presented a major issue in State taxation. The decision of the U.S. Supreme Court holding invalid Florida's inspection tax of 15 per cent on cement imported from abroad was hailed as a victory by opponents of interstate trade barriers. The courts refused to intervene as regards discriminatory taxation on alcoholic beverages imported into a State, however, holding that the twenty-first amendment to the Constitution gives the States a free hand in taxing such products.

See AUTOMOBILES; PETROLEUM; TOBACCO; PENNSYLVANIA; UNITED STATES under *Legislation*.

JULES I. BOGEN.

TAXONOMY. See BOTANY.

TCHENG LOH. See CHEN LU.

TELEGRAPHY. Technical obstacles that previously prevented good picture transmission over ocean cables were announced as largely overcome by a new system that was placed in service Apr. 24, 1939, between London and New York over the cables of the Western Union Telegraph Company. Pictures up to 6 × 7 inches are sent and received through the medium of common cylinder machines, but special electrical networks selectively compensate for the peculiarities of the cable that cause distortion. The result is a picture of realistic density and excellent detail. Western Union also introduced, in February, the first commercially available automatic telegraph machine for the transmission of facsimile messages; in August introduced a new system of dial-operated direct circuits connecting important branch offices. The Italian government was reported late in the year to have appropriated the equivalent of about \$2,780,000 for new telephone-telegraph submarine and land cables and associated open-wire lines between Italy and the principal Albanian cities. See FEDERAL COMMUNICATIONS COMMISSION.

G. ROSS HENNINGER.

TELEPATHY. See PARAPSYCHOLOGY.

TELEPHONY. Telephone instruments in service as of Jan. 1, 1939, were reported as totaling more than 39 million, of which approximately 51 per cent were the dial (automatic) type. The dial instruments were reported to be in service as follows: United States 8,500,000, Germany 3,174,000, Great Britain and Northern Ireland 1,670,000, France 745,543, Canada 613,027, remainder of the world 3,310,448.

According to Department of Commerce figures, published in *Foreign Communication News*, Dec. 22, 1939, the telephone development of certain foreign countries, as of the beginning of 1939, was as shown in the table on the next page.

Among developments of significance in wire communication were three reported before the A.I.E.E. early in 1939: (1) a submarine cable-plow, (2) a remote-control toll-board, and (3) a "crossbar" switching system for dial telephones. By means of an ingenious equipment drawn along the ocean bottom by the cable ship on the surface, submarine cables are being plowed into trenches in the ocean bottom in the commercial fishing areas to protect the cables from damage by fishing gear dragged along the bottom by steam trawlers. A related device measures and sends recording and indicating signals to the

Country	No. of Telephones	Per 100 Population	% Increase in 1938
Argentina.....	405,474	3.13	7.4
Australia.....	630,175	9.14	5.9
Bulgaria.....	29,576	.46	15.8
Chile.....	78,119	1.69	10.2
Cuba.....	54,153	1.29	5.8
Danzig.....	20,967	5.23	1
Denmark.....	442,998	11.61	4.0
Egypt.....	64,823	.29	7.1
Finland.....	185,456	4.79	8.0
France.....	1,589,595	3.79	2.4
Germany.....	3,787,484	5.55	6.0
Great Britain & N. Ireland	3,220,241	6.77	6.3
Hawaii.....	33,287	8.10	8.1
Hungary.....	165,362	1.64	10.7
Ireland.....	43,086	.47	6.6
Italy.....	611,254	1.41	1.8
Latvia.....	83,650	4.20	8.3
Lithuania.....	26,591	1.03	20.6
Netherlands.....	493,927	4.97	8.1
Netherlands Indies.....	49,360	.07	8.0
Norway.....	235,264	8.03	6.0
New Zealand.....	206,216	12.69	7.4
Philippine Islands.....	29,842	.19	6.9
Poland.....	294,828	.84	8.3
Portugal.....	69,236	.91	7.3
Puerto Rico.....	15,701	.86	3.5
Rumania.....	33,314	.47	14.9
Sweden.....	803,228	12.73	8.7
Switzerland.....	450,380	10.72	4.5
Union of S. Africa.....	205,892	2.03	8.6
Uruguay.....	46,656	2.20	5.9
Yugoslavia.....	67,588	.43	14.5

surface revealing the depth in inches to which the cable actually has been buried. To meet the public demand for ever more expeditious handling of certain classes of toll service, the new remote-control toll board simplifies the operating set-up in an exchange by providing for local-to-toll, toll-to-local, and toll-to-toll connections through the medium of electromechanical selector switches under the control of the toll operator, instead of hand-operated cord-and-jack connections. The crossbar telephone switching equipment is essentially an assembly of simple relays and relay-like structures which performs all switching operations, similar to, but with certain structural and operating advantages over, the panel and step-by-step switching equipments now commonly used respectively in the larger and the smaller cities. The crossbar equipment is expected to supplement the panel equipment in large cities. The first two crossbar exchanges were put into service in 1938, both in New York City.

Teletypewriters were used during Army maneuvers in northern New York for the transmission of military maps as well as for administrative and operating orders. In Cincinnati, Ohio, was made the first teletype installation for the high-speed transmission of fire alarms and their automatic and immediate translation into written form. With the completion of the 50-mile underground cable between Elmira and Binghamton, N. Y., almost three-fourths of the circuit mileage operated by the New York Telephone Company has thus been storm-proofed. Incidental to the extension of telephone cable facilities into the Northwest, the first fully commercial toll-line installation of coaxial cable is being made, and is expected to be in service within about a year. The coaxial installation will extend from Stevens Point, Wis., to Minneapolis, Minn.

Late in the year announcement was made that the American Telephone and Telegraph Company had been granted a construction permit for a new point-to-point radiotelephone station at Hialeah, Fla., to communicate with Panama City, San Jose, Managua, Tegucigalpa, La Lima, Honduras, Guatemala City, and San Salvador. International Telephone and Telegraph Corporation

announced the establishment in September of direct radiotelephone service between Belgium and Holland and South American points. Successful operation of a nine-channel ultra-short-wave radio link between Belfast and Stranraer has led to joint action by British and French authorities to establish a similar system for use across the English Channel. The system will provide 9 channels initially and 18 ultimately, will operate between 3.6 and 4.9 meters, and radio equipment will be remotely controlled from the nearest repeater stations to which the circuits will be completed via landline cables. A 56-position all-metal toll-board was placed in operation at Marseilles. In Colombo, Ceylon, key city of 300,000 inhabitants on the Europe-Orient trade route, one of the largest installations of automatic telephone equipment ever to be made in the tropics was completed in 1939. The system consists of three exchanges. Equipment is step-by-step type with rotary line switches and provides for automatic metering and through-dialing. Tropically humid climatic conditions required special insulation and completely air-conditioned exchanges. In May, RCA Communications, Inc., inaugurated a greatly improved method of transmitting radiophotos. See FEDERAL COMMUNICATIONS COMMISSION.

G. ROSS HENNINGER.

Bell System. There was an estimated increase of more than 750,000 Bell System telephones in 1939, bringing the total number to more than 16,500,000, a new high record. All told there were more than 20,500,000 telephones in the United States at the end of the year. Telephone conversations in the United States averaged almost 92,000,000 a day (estimated) and the total number of toll and Long Distance calls was approximately 990,000,000.

At the end of 1939 approximately 900,000 more telephones were dial operated than at the start of the year. An appreciable number of these were installed in small communities. About 600 small exchanges in the Bell System, ranging from less than 100 to 1000 lines, were converted to dial operation. Progress continued in the installation of crossbar dial central offices, 67,000 telephones being served by this type of equipment at the end of 1939.

Telephone instruments capable of giving improved transmission of speech have continued to be introduced in large numbers. More than half of all Bell telephones are now provided with the improved transmitter, and about 65 per cent are of the hand set type, including almost three million "combined sets" in which the bell and auxiliary apparatus are in the base of the cradle supporting the hand set.

Combined sets with built-in keys were introduced by the Bell System during the year. The keys provide such service features as pick-up of more than one line at one instrument; holding a call on one line while talking on another; intercommunication and signalling between several telephones on the premises without the aid of an operator or attendant; cutoff of extension telephones for privacy, etc. Heretofore the keys were separate units and were fastened to the user's furniture.

More than 13,000,000 visitors attended telephone exhibits at the New York World's Fair and the Golden Gate Exposition in San Francisco. Probably the most popular feature of each exhibit was the Long Distance demonstration, at

which about 150 persons a day were selected by lot to make demonstration calls as other visitors listened through special receivers.

WILLIAM P. BANNING.

TELETYPEWRITER. See TELEPHONY.

TELEVISION. Dedication of the RCA exhibit building at the New York World's Fair, Apr. 20, 1939, afforded the press its first opportunity in the United States to use television facilities in covering a news event. Ceremonies at the Fair grounds were telecast by NBC to Radio City where news men viewed them in RCA studios. Television programs for public pickup were inaugurated with the telecasting by National Broadcasting Company of features of the Fair's opening-day ceremonies April 30. Columbia Broadcasting System went on the air for tests with its New York City station on November 8, the first time two television stations have been on the air simultaneously in the same city. Interference, although feared, did not materialize. The advent of television in the New York City area is regarded by observers as being at once an unqualified technical success and a commercial disappointment, the latter in part at least because of the high cost (\$200 to \$750) of satisfactory receivers. Of an estimated 5000 television receivers manufactured, about 20 per cent had been sold by the year-end. Marking its 20th anniversary on October 17, RCA telecast a special program from its radiator atop the Empire State Building in New York City to an air transport liner flying over Baltimore and Washington more than 200 miles away. Late in the year, RCA and Farnsworth Television and Radio Corporation concluded an interchange of non-exclusive patent licenses. High-intensity water-cooled mercury-arc lamps for studio lighting have greatly reduced the radiant heat which television performers have suffered. A successful experimental use of telephone cable circuits for the short-distance transmission of television currents from portable pick-up equipment seemed to open new possibilities, which, however, are rigorously limited by technical complications. Coaxial cable still offers the only feasible means for wire-transmission of television currents, because its losses are but about a millionth part of those of an ordinary cable pair. Radio Manufacturers' Association has established a standard of 441-line screen and speed of 30 frames per second, but experimental results indicate the possibilities on the one hand of more lines for enlargement or better definition of pictures or, on the other hand, of reduced speed and consequent reduction in width of wave band required. Television screen tubes in use range from 5 to 12 inches in diameter and a new 20-inch tube has been developed using a new "phosphor" said to reduce flicker effect. Big-screen (6 x 8 ft.) television receivers have been tried in both Germany and England, but have proved costly, and results have been inferior to standard movie quality. This aspect of television is dormant in the United States at present. Outside of New York City the only regular program service offered is in Los Angeles, Calif. The FCC is pondering several license applications, and has established rules to govern telecasting stations. In the Eiffel Tower, Paris, a 25-kilowatt telecasting station is reported as having been ready for operation when the present war broke in September. There, a 12-ton 1200-ft. coaxial cable connects the station at the base of the tower with the radi-

ator at the top. The initial success of a relay station which picks up New York City television programs for re-telecasting in the vicinity of Albany may point the way toward solution of that phase of the problem which centers around the limited range of telecasting stations. Frequency modulation (see RADIO) ultimately may play a part in television development.

G. ROSS HENNINGER.

TEMPLETON, FAY. An American actress, died in San Francisco, Calif., Oct. 3, 1939. Born in Little Rock, Ark., Dec. 25, 1865, she made her first appearance as Cupid on Aug. 16, 1869 in her father's opera company, which he renamed the Fay Templeton Opera Co., in 1875. In 1885 her career began in earnest when she appeared in *Evangeline*. Married to Howell Osborn, her second husband, she went abroad and in 1886 made her debut on the London stage as Fernand in *Monte Cristo, Junior*. She did not return to New York until after her husband's death in 1895 and was seen then in *Excelsior, Jun.*

In 1900, Miss Templeton joined the Weber and Fields Company and was with them for four seasons, achieving a huge personal success as the singer of "Rosey, You are My Posey." During 1903-04 she had her own company, and on Sept. 25, 1905, opened at Columbus, Ohio, in *Forty-Five Minutes From Broadway* by George M. Cohan. This play opened in New York on Jan. 1, 1906, and in it she sang "Mary Is a Grand Old Name" and had a long and successful run. She retired from the stage in April, 1907.

In 1906 she married William Patterson (d. 1931) and lived in retirement until 1911 when she reappeared in a revival of *H.M.S. Pinafore*, playing her old role of Buttercup, which was considered one of her finest. She joined Weber and Fields on the occasion of their reunion in 1912, and in 1912 appeared in vaudeville. In 1926, 1931, and 1932 she again appeared as Buttercup. Her last part was the title-role in Jerome Kern's musical comedy, *Roberta* in 1933.

TEMPLE UNIVERSITY. A coeducational institution of higher learning in Philadelphia, Pa., founded in 1884. The 1939 autumn enrollment was 6170 in the three colleges of liberal arts, education, and commerce and 2095 in the eight professional schools of chiropody, dentistry, law, medicine, oral hygiene, pharmacy, theology, and nursing. The 1938 summer session had an attendance of 1563. There were 752 faculty members. The income for the year ending June 30, 1939, totaled \$2,169,380. The libraries of the University contained 175,000 volumes. President, Charles E. Beury, LL.D. See PHOTOGRAPHY.

TENNESSEE. Area and Population. Area, 42,022 square miles; included (1930) water, 335 square miles. Population: April 1, 1930 (census), 2,616,556; July 1, 1937 (Federal estimate), 2,893,000; 1920 (census), 2,337,885. Memphis (1930) had 253,143 inhabitants; Nashville, the capital, 153,866.

Agriculture. Tennessee harvested, in 1939, 5,902,900 acres of principal crops. Corn and hay took nearly three-fourths of this acreage. Corn, on 2,635,000 acres, gave 52,700,000 bu. (estimated farm value, \$38,998,000); tame hay, on 1,621,000 acres, 1,629,000 tons (\$14,987,000); cotton, 726,000 acres, 450,000 bales (\$19,800,000); tobacco, 117,900 acres, 102,716,000 lb. (\$12,775,000); wheat, 358,000 acres, 4,117,000 bu. (\$3,458,000); sweet potatoes, 47,000 acres, 3,713,000 bu. (\$2,-

785,000); potatoes, 41,000 acres, 2,911,000 bu. (\$2,212,000).

Manufacturing. The U.S. Census of Manufactures published in 1939 a report on Tennessee showing the following totals for 1937 (figures for 1935 are subjoined in parenthesis): Active manufacturing establishments numbered 2083 (1991), employed 135,073 wage-earners (112,434), and paid them \$109,247,514 (\$81,245,588); all factories' totals of output aggregated \$707,986,784 (\$520,968,985), to which the manufacturing processes contributed \$295,626,708 (\$218,537,160).

The making of textiles yielded nearly one-fifth of all value of manufactured products, furnished over one-fourth of all value added by manufacture, and employed one in eleven of all factories' wage-earners. The textile industry was itself diverse; it covered the spinning, weaving, knitting, dyeing, and finishing of rayon, cotton, and wool. The output of rayon and allied products amounted, for 1937, to \$59,132,550; that of cotton yarn and thread, to \$7,474,943; of woven cottons, to \$13,541,795; hosiery-knitting, to \$29,219,241; the knitting of underwear, to \$14,358,311; the weaving of woolen goods, to \$5,708,593; the dyeing and finishing of yarn, to \$2,226,948. The making of garments, exclusive of the knitted ones already mentioned, but inclusive of boots and shoes, approximated \$46,000,000 of output; of this sum, boots and shoes furnished \$20,897,976, clothing for work, for sport, and for other wear, \$24,014,045. As in other cotton-growing States, the treatment of cottonseed produced oil, cake, and meal; the output of these attained \$20,150,709. In Tennessee, moreover, a special industry produced shortenings (without lard), vegetable cooking oils, and salad oils to the value of \$36,457,022. This amount, however great in relation to the output of all manufacture, was offset, to the extent of more than nine-tenths, by the cost of materials, etc. The preparation of tobacco for smoking, chewing, and snuffing produced an output of \$14,492,782.

The manufactures of Memphis amounted to \$150,879,273 for 1937; the total for Chattanooga was \$86,948,394; for Nashville, \$83,547,312; for Knoxville, \$60,111,487.

Mineral Production. The yearly total value of the State's production of its native minerals, \$34,893,847 for 1937, came, to the extent of almost one-third, from coal; cement, stone, zinc, and clay products ranked after coal, in the order in which they are named. The yearly quantity of the mines' production of coal diminished to 4,373,000 net tons (1938), from 5,212,000 tons, in value \$10,373,000, for 1937. The makers of Portland cement, contrary to the general trend in the Union, increased their shipments to 3,390,871 barrels for 1938, from 3,013,817 for 1937; by value, to \$5,063,628, from \$4,683,717. The production of stone diminished in yearly quantity to 2,599,840 short tons (1938) from 2,720,750 tons (1937); but it increased in value to \$4,237,351 (1938) from \$3,979,159 (1937); orders for exterior marble in the construction of the National Art Gallery at Washington lifted Tennessee's production of marble for 1938 to 29,130 short tons; in value, to \$1,779,961, the highest value for marble produced by any State in that year. The output of zinc, including production from Virginia, rose to 56,766 short tons (1938) from 55,255 (1937); by value, the product totaled \$5,449,536 (1938). Clay products, valued by the U.S. Bureau of Mines

in 1939 as having attained, for 1937, \$1,873,644, did not include the value of pottery; as earlier years' estimates of clay products had included pottery, there resulted an apparent but not actual drop of about \$1,170,000. The mining of phosphate rock again increased, to a total of 899,298 long tons for 1938, from 825,099 tons for 1937; in value, to \$3,725,601, from \$3,343,108.

Legislation. Meeting in January, the regular biennial session of the Legislature continued until March 10. Its most conspicuous act was the repeal of the State's law prohibiting the sale of intoxicating liquors. The liquor measure enacted allowed the sale of liquor in the package in any county where the popular vote should so decide.

Legislators passed and Governor Cooper approved three proposals for amending the State constitution. These were to enable the State to impose an income tax, to increase the pay of each member of the Legislature to \$10 a day, from \$4, and to lengthen the term of the Governor to 4 years, from 2 years. A fourth proposed amendment, to lengthen the term of legislators to 4 years, from 2 years, was reported to have been voted by them and sent to the Governor.

Enactments of the session granted State aid to the public schools at the rate of \$10,500,000 a year and granted free textbooks to pupils in grades 1 to 3; revised the plan of interest-payment on the State's highway obligations to the counties, so as to save the State about \$300,000 a year; provided a method for the consolidation of counties, some of which (notably those partly overflowed by reservoirs of the TVA) lacked the taxable wealth easily to support a separate existence; increased the allowable loads of motor trucks to 24,000 pounds, increasing the tax on the heavier trucks; protected the State's high gasoline tax of 8 cents a gallon by forbidding vehicles to enter the State when carrying more than 18 gallons in the fuel tank; and repealed the county-unit primary act, the act to purge registration books, the ouster act to remove public officials without trial by jury, and the act creating a special State prosecuting force.

The Legislators rejected, as before, a bill to repeal the act, once the occasion of a sensational trial, forbidding the teaching of evolution; they tabled a resolution to give the State's ratification to the pending proposed Federal constitutional amendment for regulating the labor of the young; both houses received a bill to tax public utilities owned by the TVA, in compensation for the loss of revenue previously derived from the Tennessee Electric properties, which the TVA acquired.

Political and Other Events. Prentice Cooper was inaugurated as Governor on January 16. A Court composed of two Federal district Judges gave a decision, September 11, that payment of the State's poll tax was a constitutional and valid requirement for qualification to vote in National elections in the State.

The TVA, Federally owned and operated agency for the production of electric current from the water-power of the Tennessee River area, bought on April 12, in company with certain cities in Tennessee, the properties owned by the Commonwealth and Southern Corporation, through its subsidiary the Tennessee Electric Company, within the State. The transaction had been sought by the leading interests in the Corporation, as a way out of its financial destruction by Federally aided competition. The cities were to get, by the deal, ready-made systems of distribu-

tion enabling them to start business in the municipal distribution of electricity without delay. The price to be paid to the sellers was \$78,600,000; payment was delayed until the enactment by Congress, in July, of means for meeting the amount. The cost to the TVA was \$46,000,000; the rest of the cost was borne mainly by Chattanooga, Nashville, and certain other municipalities as the price of local properties that they acquired for systems of municipal distribution. Memphis joined the group of municipal partners of the TVA by agreeing in February to buy the local property of the Memphis Power and Light Company for \$17,360,000, of which the TVA was to contribute \$2,110,000 and the city itself was to raise the rest.

County Judge E. L. Eblen, of Roane County, declared before a hearing of the U.S. House of Representatives' committee on military affairs, early in December, that the loss of taxes on public utilities' properties acquired by the Federal Government would force counties to default on bonds to a total of \$14,000,000 unless the Government would consent to let itself be taxed on such properties or would make equivalent amends for the revenue that it had taken away. The estimated loss of taxes in Tennessee was \$3,000,000 a year.

Officers. Tennessee's chief officers, serving in 1939, were: Governor, Prentice Cooper (Dem.); Secretary of State, A. B. Broadbent; Treasurer, John Harton; Comptroller, Robert W. Lowe; Attorney-General, Roy H. Beeler; Commissioner of Education, B. O. Duggan.

TENNESSEE, UNIVERSITY OF. A State institution of higher education, nonsectarian, and co-educational, in Knoxville. The enrollment for 1939-40 was 4443. The total enrollment for the 1939 summer session was 2536. The endowment for the year was \$480,833, and the income amounted to \$20,720. The library contained 184,002 volumes. A new residence hall for girls was opened. President, James D. Hoskins, LL.D.

TENNESSEE VALLEY AUTHORITY (TVA). The Tennessee Valley Authority is a corporation wholly owned by the United States Government. It was established by the Tennessee Valley Authority Act of May 18, 1933, later amended in 1935 and 1939. The TVA Act stipulates among its objectives the improvement of the navigability and the provision for the flood control of the Tennessee River; provision for the agricultural and industrial development of the Tennessee Valley; provision for the national defense; and the development and distribution of incidental hydroelectric power to the public. The agency is further empowered to make such studies, demonstrations, and recommendations as will further the economic welfare of the region involved.

In carrying out its programme, the TVA is constructing in the river channels a series of high dams that will provide a navigable channel for boats of nine-foot draft from Paducah, Ky., to Knoxville, Tenn. These same high dams also provide great storage capacity for the control of destructive flood waters and at the same time create a large amount of water power. At the close of the year the Authority had completed and placed in operation four multipurpose dams—Norris, Wheeler, Pickwick Landing, and Guntersville. Two additional dams, Hiwassee and Chickamauga, were nearing completion, and work on the Kentucky and Watts Bar projects was under way.

Agreements were made during the year be-

tween private utilities of the area and the Authority and several municipalities whereby sale of the private power properties was concluded. As a result, the TVA system of dams, while operating for navigation and reduction of floods, serves a market of 325,000 customers at an annual saving to them of some \$8,000,000, and annual revenue to the Tennessee Valley Authority of \$15,000,000.

Of the 26,000,000 acres comprising the Tennessee Valley drainage area about 18,000,000 are in farms, of which one-third is in farm woodlands, pasture, and cultivated crops, respectively. Practically all of the remaining 8,000,000 acres are in forests, publicly and privately owned. Some of these forested areas are at present not fully effective for purposes of water control, and some 7,000,000 acres in the farm areas are now subject to appreciable erosion.

These losses in soil and water can be reduced by measures of control provided by improved farm and forest practices. Such practices must rest largely upon a self-sustaining basis, however, if they are to be widely and permanently adopted. In line with these principles, therefore, Congress directed the Authority to take over the war-time Wilson Dam and the nitrate plants at Muscle Shoals, maintain them for national defense, and operate them with a view to effecting the production of new and improved forms of plant food.

In practically every state it has been possible for farmers to determine for themselves the extent to which improved fertilizers will enable them to readjust their farm programmes in the interest of water control and of soil conservation. Over 27,700 farmers, whose farms represent a total of more than 4,400,000 acres, are now actively participating in this phase of the TVA programme alone. In addition, more than 105,000 tons of concentrated phosphatic fertilizer have been produced for distribution through the Agricultural Adjustment Administration in furtherance of its national programme. It is noteworthy that only since this arrangement was made with the TVA has it been possible to secure concentrated phosphates from private producers in appreciable amounts. Guidance has been given to farmers in terracing nearly a half-million acres of farm land in the Valley at their expense. Nearly 100,000,000 trees have been planted in a programme designed to overcome serious soil erosion and at the same time to provide a new source of forest income.

Under Sections 22 and 23 of the TVA Act, the Authority serves as a strong unifying agency within the region, placing its experience in the conservation and use of resources at the disposal of the public, co-operating with states, localities, and organizations in the solution of related problems and in the development of mutually consistent programmes. As authorized by law, it conducts demonstrations and experiments to pave the way for action by other governmental units. See TENNESSEE under *Political Events*, *Courts*, *Federal*; *Supreme Court*; *Architecture*; *Soils*; *United States* under *Departments and Agencies*, and *United States Congress*, *Investigations*.

H. A. MORGAN.

TENNIS. See *SPORTS*.

TERRORISM. See *CHINA*, *CUBA*, *GERMANY*, *GREAT BRITAIN*, *IRELAND*, *IRELAND*, *NORTHERN*;

PALESTINE, POLAND, and RUMANIA under *History*; COMMUNISM; FASCISM.

TEXAS. Area and Population. Area (1930, with later correction to include 45 square miles gained from Oklahoma in revision of boundary), 265,941 square miles; included (1930) water, 3498 square miles. Population: Apr. 1, 1930 (census), 5,824,715; July 1, 1937 (Federal estimate), 6,172,000; 1920 (census), 4,663,228. Houston had (1930) 292,352 inhabitants; Dallas, 260,475; San Antonio, 231,542; Fort Worth, 163,447; Austin, the capital, 53,120.

Agriculture. Farmers in Texas harvested, in 1939, 25,122,100 acres: this fell by one-eighth below the average harvested area for the decade 1928-37; and it exceeded, by nearly one-fourth, the area harvested in 1939 by Iowa, next in magnitude. Cotton, on 8,608,000 acres (as against 13,395,000 acres, decade's average) made 2,830,000 bales (estimated value on the farm, \$121,690,000); corn, on 4,586,000 acres, 73,376,000 bu. (\$41,091,000); grain sorghums, 3,465,000 acres, 38,115,000 bu. (\$22,488,000); wheat, 2,765,000 acres, 27,650,000 bu. (\$17,420,000); rice, 269,000 acres, 13,988,000 bu. (\$11,610,000); oats, 1,250,000 acres, 28,750,000 bu. (\$8,338,000); tame hay, 1,163,000 acres, 1,022,000 tons, (\$8,687,000); peanuts, 312,000 acres, 129,480,000 lb. (\$4,014,000); grapefruit, (indicated total) 15,200,000 boxes (\$5,928,000); sweet potatoes, 63,000 acres, 3,780,000 bu. (\$3,402,000); potatoes, 43,000 acres, 2,666,000 bu. (\$3,119,000).

Manufacturing. The U.S. Census of Manufactures published in 1939 its biennial report on Texan manufactures, covering 1937. The following were the chief totals for 1937 (accompanied by those for 1935, in parenthesis): Active manufacturing establishments numbered 4422 (4167) and employed 129,501 wage-earners (99,124), who received \$132,505,115 (\$90,202,214); all these factories' totals of output aggregated \$1,581,422,401 (\$1,059,245,252), to which the processes of manufacture contributed \$439,854,447 (\$295,127,739). The value of the output of all manufactured products of 1937 exceeded any in the five preceding biennial reports of this total, starting with 1927; the highest of these predecessors, that for 1929, was \$1,427,022,000. Though output thus exceeded the old top in dollars, the higher cost of materials, etc., used in manufacture brought 1937's total of value contributed by manufacturing processes below the corresponding figure of 1929; wage-earners, also, were somewhat fewer and total wages lower.

Five industries that each produced manufactured goods in total for 1937, above \$50,000,000 accounted among them for more than three-fifths of all the Texan factories' output. These were the refining of petroleum, which gave manufactured products of \$689,625,304; meat-packing, \$97,980,983; grain mills' flour and other products, \$62,873,757; miscellaneous machinery, \$60,736,935; and the transformation of cottonseed into oil, cake, and meal, \$52,322,363.

Cities reporting more than \$100,000,000 each in manufactured output for 1937 were thus stated: Houston, \$146,145,451; Dallas, \$140,626,858; Fort Worth, \$110,013,332.

Mineral Production. Texas produced from its soil in 1937 minerals valued at \$813,270,605; the chief item, petroleum, of which Texas was the leading producer in the Union, made up nearly three-fourths of the State's entire total for 1937; natural gas and gasoline extracted from it con-

tributed somewhat less than one-fifth; sulphur, cement, sand and gravel, clay products, and stone were also produced to substantial totals. The output of petroleum, 475,614,000 barrels, approximately, for 1938, was again by far the greatest in the Union, but it fell considerably below the 510,318,000 barrels of the State's output for 1937. By value the total for 1937 attained \$594,500,000. A lower demand and consequent lower prices reduced the output in 1938. Production of natural gas according to the Texas Railroad Commission, approximated 1100 billions of cubic feet for 1938 and outran 1937's by 11 per cent. Other figures put the production of natural gas for 1937 at 1040 billion cu. ft.; made allowance for gas used in repressuring or gone by loss and wastage; and arrived at 854,561 millions as the number of cubic feet of natural gas that was marketed in 1937; the value of this total was \$132,166,000. The production of gasoline from natural gas increased to 655,800,000 gallons (1938) from 615,281,000 gallons, in value \$24,329,000 (1937). Texas produced about six-sevenths of the Union's output of sulphur for 1938, the year's total for the State being 2,058,940 long tons, as against 2,030,315 tons, in value \$36,535,670, for 1937.

Education. For the academic year 1938-39, pupils' enrollments in the public schools of Texas numbered 1,353,555. The year's expenditure for public-school education approximated \$85,400,000. The sum included pay for 45,131 teachers, averaging \$1032. The State government aided the public schools during the year with a per-capita apportionment at the rate of \$22 and an equalization fund that paid over \$5,000,000.

Legislation. The 46th State Legislature started its regular session January 10; adjourned June 21. It failed either to adopt or to find a substitute for Governor O'Daniel's plan for heavy new taxation to cover a great increase in the State's payments to old folk; on the other hand it enacted a bill so framed as to allow such rise in rates of the State's payment of old-age pensions, and likewise to add so many to the number of qualified recipients, as to increase the yearly cost to an estimated \$50,000,000.

The State's old-age-assistance act of 1939 amended the Texan system of pensions to the elderly by qualifying for pensions persons of 65 or over who had as much as \$1000 (or for a married couple, \$1500) in personal property, a life-insurance policy for \$1000, \$360 in cash, and a homestead as defined in the State constitution—a residence, with a piece of not more than 200 acres of land; disqualification for the pension on the ground that the applicant had children with the means to support him was expressly forbidden.

The act was passed without provision for raising the money to pay the added total in pensions that its provisions might create. The sales tax was as unpopular a proposal as the higher and more numerous pensions were popular; O'Daniel had promised his supporters to raise the pensions without creating a sales tax, although no other adequate and yet unused source of money could be discerned. O'Daniel met the dilemma by bidding the Legislature to give the State a transaction tax at the rate of 1.6 per cent on "any dealing of every kind between two or more persons," charities, wages, professional fees, farmers' original sales of their farms' products, and newspapers and street-car fares excepted. He proposed that this tax be fixed on the State as a constitu-

tional amendment. The general inability to reckon what such a tax would bring in, or how it would affect economic conditions, the scanty precedent for such a tax, and the feeling that instead of avoiding the retail-sales tax the Governor simply sought to tax sales all the way down the line and most other transactions as well caused the total failure of the Governor to win effectual support for his scheme. Other ways to raise the money occupied the Legislature's attention; bills to create a retail sales tax or to increase the already high rates levied on mineral production and other special sources of wealth were repeatedly passed in one house or the other, but none reached the statute books. The close of the session thus left the State obligated by its own law to pay an unknown additional yearly amount in pensions to the elderly, yet without a cent of additional revenue created for this purpose.

The Legislature failed, like several of its predecessors to mend the condition of the State's general fund, which had been accumulating a creeping deficit for about ten years, now amounting to \$18,000,000. The session's appropriations for the next two years' departmental, judiciary, eleemosynary, and educational needs aggregated \$61,606,190, or about \$1,200,000 less than for the previous biennium; but those for the State's rural aid rose by about \$4,500,000, to \$15,504,664; and a further threatened impairment of the general fund was created by the passage of a bill remitting to the counties one half of their respective collections of the State's ad valorem tax on property for the next five years, whereby the State surrendered about \$4,000,000 a year of its usual income. Following precedent, the Legislature also granted special remission out of the same tax, to a number of individual counties represented as being in special need.

Other acts of the session abolished the office of State Tax Commissioner and assigned its duties to the Comptroller; furnished a way for organizing farmers on a local basis in accordance with the system of soil-conservation districts; declared the territory of the State to extend, at the seaboard, across the East Sabine jetties, into the Gulf of Mexico, in the shape of a gore, claimed by Louisiana and of possible importance as a source of petroleum; and created a Welfare Board, to administer the State's functions in social security through a Department of Public Welfare. A fair-trade act, to permit merchants to maintain fixed prices, despite anti-trust laws, on nationally marketed trademarked goods was vetoed. A new law on vehicles required registered certificates of title for all motor-driven cars. The law on title to school-fund lands was revised; the fee for filing on vacancies was raised to \$100, from \$1; occupants of unfilled land and adjoining owners gained preferential right to lease or buy it; a State School-Land Board was created to administer the disposal of such lands in place of the Land Commissioner, whose handling of the task (see YEAR BOOK, 1938, p. 724) had been questioned. The persons handling food and the 5000 or so establishments in which they worked were subjected to examination by the State's Department of Health. Soliciting persons for money to aid movements for higher pensions was made unlawful by an act that Attorney-General Mann declared (September 13) in an official opinion, to be unconstitutional.

Political and Other Events. W. Lee O'Daniel, political newcomer and former itiner-

ant flour-salesman, took office, January 17. In July O'Daniel made or approved reductions of \$13,104,206 among the items of seven appropriation bills.

Later in the year, as the State continued short of available cash, the situation of the recipients of old-age assistance became less satisfactory than it had been before the passage of the amplified pensions. The State borrowed \$2,230,000 from banks and used it to keep up the payments for a time; but in September the Welfare Board reduced the monthly payment to each recipient by \$6, thus dropping about 1500 persons who had been getting \$6 each or less. There remained about 120,000 on the rolls. The Federal Social Security Board notified Texas unless all recipients were re-examined in the meantime it would suspend the Federal contributions to old-age assistance in Texas after July 1, 1940. There were, at the time of this announcement, some 40,000 listed applicants for old-age pensions, claiming qualification under the terms of the new act; the State had no means to satisfy their claim.

Attorney-General Mann rendered, October 4, an opinion that the regular session's act remitting to the counties, pro rata, the State's revenue for the year, from the ad valorem tax, to a total of approximately \$25,000,000, was unconstitutional. Another of Mann's opinions, August 13, advised the Governor that, despite a number of earlier appointments to the contrary, a member of the Legislature, during the term for which he had been elected to that office, could not be appointed to a position on the State Bench.

The Railroad Commission, of which the duties included the proration of the output of petroleum, took the radical course of ordering, August 14, that all the State's petroleum wells cease production for a month. This step followed upon companies' cutting the already unsatisfactory price for petroleum by 20 cents a barrel. Oklahoma, Kansas, Arkansas, Louisiana, and New Mexico followed suit; there followed the most extensive concerted closing of wells by public authority in the mid-continental field. The production of the area fell sharply and purchasers bid the price up again in a short time. Texas, acting about the same time as the other States, allowed the wells, August 31, to reopen. Earlier in the year the Railroad Commission had ordered weekly shutdowns of the wells, both in May and in June, to total six days a month. Dealing with the railroads' charges for carrying freight in Texas, the Railroad Commission ordered in October that the charging of differential rates cease at all points on November 20. This order broke with a long past of discrimination between areas or routes in the matter of freight charges. The State's Attorney-General, at the time, intended soon to address the Interstate Commerce Commission on behalf of the abolition of differentials setting the rates for freight carried by rail in interstate commerce higher in the Southern States than in those of the central and northeastern regions. The order issued in Texas cleared the railroad traffic interior to that State of a feature that might have been represented to show Texas as doing otherwise than as Federal regulation of rates was urged to do. Shippers from the Rio Grande Valley, moreover, had been complaining, as their agricultural output grew, that the high cost of shipping kept their profits down.

Colorado River Floods. Hostility to the Lower Colorado River Authority, the State body administering the operation of the Buchanan

Dam, a Federally built structure holding water for the generation of electric current, had been roused by the damage done by the flood of July 1938. Farmers damaged by the flood blamed the management of the dam with letting water out at the time when it should have been held back. The Authority, facing prospect of the passage of an adverse bill in the Legislature, undertook to seek funds for raising the Marshall Ford Dam 75 feet higher, so that it might store more water and thus catch the downflow of floods. The regular session of Congress appropriated \$5,000,000 to this purpose, and the Federal Bureau of Reclamation, in charge of the latter dam, prepared to do the work.

New Crops and Products. The growing output of the counties near the mouth of the Rio Grande was evident in the complaint from the Rio Grande area about freight rates and in local opposition to the State's efforts to keep heavy motor-trucks, the conveyers of such products, from using and wearing down the roads. According to a published estimate, the so-called delta of the river had received about 200,000 settlers in the course of twenty years. During the area's active season it counted on shipping vegetables mainly to Kansas City and St. Louis at a rate varying from 200 carloads a week, around the end of December, to 1200 a week in the middle of April. Grapefruit trees, few over 15 years old, were reckoned to number 5,000,000; though many had yet to reach the age of bearing, the crop of the winter of 1938 provided shipments of 16,000 carloads of fresh fruit sent to distant markets. Culture was mainly on about 450,000 acres of former thicket land, cleared mainly by individual capital at a cost believed to total \$9,000,000.

With a view to the manufacture of paper the Southland Paper Mills, Inc., started the building of works at Lufkin; a carload of pine timber from East Texas was taken to Savannah, Ga., and there converted at the Herty laboratory into newsprint paper described as of satisfactory quality. The possibility of putting cheap natural gas to work on native ores of iron led a group interested in property near Longview, in East Texas, to try to form a company. Interest in new crops and lines of production was stimulated by the unsatisfactory state of the cultivators of cotton; Dean Kyle of the Texas Agricultural and Mechanical College stated that the Texans living on cotton farms numbered about 1,775,000, that these farms' income from cotton had totaled \$748,000,000 for 1923, and that the corresponding income from cotton, plus Federal subsidies, had brought them only \$153,400,000 for 1938.

Municipal and Local Events. In San Antonio a meeting of Communists was held, August 25, in a room of the Municipal Auditorium, under promise of protection from the police. A crowd of several thousand made an adverse demonstration outside, and some of its members stoned the meeting through the windows, while the police used tear gas and played fire hose on the mob. The Communists got away by exits in the rear and basement; about 15 people were hurt. The proximity of San Antonio to Mexico tended to make dwellers in the area sensitive to reports of Communist indoctrination. Mayor Maury Maverick, former U.S. Representative, was reported to have given the assurance of protection to the meeting. Maverick was indicted, October 16, on charges of paying the poll taxes of five gar-

ment workers, in violation of a State law, during the campaign preceding the last election. He denied the veracity of witnesses against him and was acquitted, December 5.

In Dallas a Federally financed plan of the city's housing authority to build dwelling-places for Negroes at a cost of \$3,000,000 was opposed by a group of Negroes owning homes in the area to be condemned; fifty-three such owners brought suit, September 7, to stop proceedings for the condemnation of their property. Near Houston, the previously completed San Jacinto Monument was formally dedicated, Apr. 21, 1939.

Officers. The chief officers of Texas, serving in 1939, were: Governor, W. Lee O'Daniel (Dem.); Lieutenant-Governor, Coke R. Stevenson; Secretary of State, Tom L. Beauchamp; Treasurer, Charley Lockhart; Comptroller, George H. Sheppard; Attorney-General, Gerald Mann; Superintendent of Public Instruction, L. A. Woods.

TEXAS, UNIVERSITY OF. A State institution of higher education for men and women, founded in Austin in 1883. For the autumn of 1939 the enrollment at the Main University totaled 10,213; that at the Medical Branch in Galveston was 549. There were 633 members on the faculty. The 1939 summer session had an attendance of 6062. The endowment resources (in part for the Agricultural and Mechanical College of Texas) amounted to more than \$41,000,000. The libraries contained 613,615 volumes. President, Homer Price Rainey, inducted Dec. 9, 1939.

TEXAS STATE COLLEGE FOR WOMEN. A college of liberal and technical arts in Denton, Texas, established in 1901 for the higher education of women by the Legislature of the State of Texas. The enrollment for the fall semester of 1939 includes 2671 students in the day session. There is no evening session. The enrollment for the summer session of 1939 was 1103. The faculty numbers 167. The library contains 68,000 volumes. Seven new buildings, erected at a cost of \$1,300,000 were completed during 1936-37. Student Chapel completed in 1939. New Education building soon to be constructed. President, Louis Herman Hubbard, Ph.D., LL.D.

TEXAS TECHNOLOGICAL COLLEGE. A State coeducational institution at Lubbock, Tex., opened in 1925. The enrollment in the fall semester of 1939-40 was 3890 (agriculture, 533; engineering, 890; home economics, 462; arts and sciences, 2005). The 1939-40 enrollment, including both fall and spring semesters, was estimated at 4200. During the summer session of 1939 there were 1932 students enrolled. The teaching staff for 1939-40 numbered 173. The State appropriation for salaries and maintenance amounted to \$555,586 plus \$40,000 for the summer school. The income from student tuition was estimated at \$240,000, including summer school. The library contained 65,032 catalogued volumes and public documents.

TEXTILES. Textile mill activity in the United States during the year 1939 was approximately 30 per cent higher than that of 1938, and exceeded even that of 1937, according to a review by *Textile World*. It was about 35 per cent above that of a so-called "normal" year (1923-25 average). Although this was partly due to the stimulus of the war in Europe in the last four months of the year, the rate during the first eight months was also well above that of the corresponding period of the preceding year. The

main effect of the war situation was to stimulate demand, boost prices, and restore a profit margin to practically all branches of the industry. Conditions in these various divisions are summarized below. See BUSINESS REVIEW; CHEMISTRY, INDUSTRIAL; ELECTRICAL INDUSTRIES.

Cotton. Consumption of cotton in the mills of the United States during 1939 totaled 7,367,131 bales, an increase of 25 per cent over the 1938 consumption of 5,901,952 bales. The 1939 total was nearly as large as that of the record year of 1937. Despite a relatively high rate of production in the first eight months of the year, prices and profit margins were unsatisfactory and inventory accumulated. The sharp demand created by the outbreak of hostilities in Europe changed the picture completely and the last four months of the year were profitable as well as busy ones. The major factor influencing the industry, other than the war situation, was the wage-hour law. The industry committee recommended a 32½¢ minimum wage for the cotton, rayon, and silk divisions. In the cotton branch, this created another North-South split on the basis of the insistence of the South that it should have a differential below the Northern wage. After heated hearings, the wage-hour administrator accepted the committee's recommendation, to take effect Oct. 24, 1939.

Wool. Production activity in woolen and worsted mills during 1939 was approximately 40 per cent above that of 1938, 15 per cent above 1937, and 5 to 10 per cent greater than in 1936, but was about 5 per cent less than in the post-war record year of 1935, according to the statistics of the National Association of Wool Manufacturers, based on the first 11 months of the year. The peak of activity for 1939—and in fact the highest level of wool textile mill activity since the first quarter of 1937—was reached in October and November. The war situation not only was an impetus to demand and consequently to mill production, but had an even more radical effect on prices of raw wool. The peak price reached in the fall was approximately 55 per cent greater than the starting price just before the war boom set in; this subsequently leveled off to a range of from 40 to 45 per cent advance from the starting point. Prices of wool goods also advanced but not to the percentage extent of the raw material rise.

Rayon. Synthetic fiber continued to make the real news in the textile industry during 1939. Domestic rayon filament yarn consumption in that year totaled 356,000,000 lb., a new all-time record high, according to the Textile Economics Bureau, Inc. That figure exceeded the 1938 consumption total by 30 per cent. Rayon staple fiber likewise showed a new consumption record in 1939 with a figure of about 100,000,000 lb., exceeding the previous high in 1938 by 88 per cent. Of even greater interest than this statistical advance was the development of entirely new synthetics. One of these, Nylon, aroused particular popular interest because of its use in full-fashioned hosiery in place of silk. Production of Nylon had just gotten started at the end of the year. Another new synthetic, Vinyon, is finding its initial outlets in industrial fabrics, thus being particularly a competitor of cotton.

Silk. Silk was the only one of the four major textile fibers which did not give a good account of itself in 1939. Consumption by United States mills was 7 per cent less than that for the previous year. The total for 1939 was 383,431 bales,

against 411,794 bales in 1938. Silk's decline in use has been due to a considerable extent to the continued encroachment of synthetic fibers. The threatened invasion of its last major stronghold, full-fashioned hosiery, by the new synthetics as noted above, is particularly serious. In addition to this factor, 1939 held another problem for silk in the form of a sharply rising price, in the face of a declining use. In December, 1939, the price reached a high that was 140 per cent above the December 1938 average.

Conclusion. Generally speaking, the textile industry entered 1940 under better circumstances than had characterized it for some years. Most divisions still had a good backlog of orders; prices included profit possibilities; and fairly well sustained demand was indicated. However the many variables in the situation make prediction difficult. The best estimate is that 1940 textile mill activity will probably not run so high as that of 1939 but should come in between the rates of 1938 and 1939. However the prospect is for a more profitable basis during the year as a whole, than during 1939 as a whole.

DOUGLAS G. WOOLF.

THAILAND, tī'länd (SIAM). An independent monarchy of southeastern Asia. Capital, Bangkok (pop. 886,150 in 1937). King, Ananda Mahidol, born Sept. 20, 1925, who ascended the throne Mar. 2, 1935. The name Thailand was officially adopted in place of "Siam," the previous designation; the change became effective June 24, 1939.

Area and Population. Area, 200,148 square miles; population, estimated at 14,976,000 in July, 1938 (14,464,489 at 1937 census). Nine-tenths of the inhabitants are of Thai (Siamese) origin. There are about 500,000 Chinese, 500,000 Indians and Malays, 60,000 Cambodians, and less than 2000 Europeans and Americans. Bangkok's population in 1937 was 886,150.

Education and Religion. Elementary education is compulsory and free, but about 35 per cent of the adult population was illiterate in 1938. Besides two universities at Bangkok, there were in 1938 10,616 schools of all kinds with 1,309,919 pupils. Buddhists in 1930 numbered 10,958,426, Mohammedans 498,311, Christians 49,462.

Defense. Two years of compulsory military service for all males between 18 and 30 was introduced in 1937. The effectives of both army and air corps total about 30,000 men. The navy of 4 coast defense vessels, 4 submarines, 18 torpedo boats, and smaller units is of modern construction. Two cruisers, two torpedo boats, and a mine-layer were being built in 1939.

Production. Agriculture directly supports over 80 per cent of the population. Mining and lumbering are the other chief industries. Rice is both the principal export and main article of diet. Production (1938) was in metric tons: Rice, 4,937,400; tobacco (1937), 8100; cotton-seed, 4900; rubber (exports), 42,000; cotton (1937), 2100; tin ore (metal content), 14,000. Teak exports in 1938 were valued at 9,161,930 bahts. Livestock (1937) included 5,618,000 bullocks, 5,533,460 buffaloes, 10,723 elephants, and 374,236 horses. Rice milling and saw milling are the chief manufacturing industries. The government, besides encouraging private industry, operates a cotton mill, paper factory, sugar mill, distillery, oil refinery, and airplane factory.

Foreign Trade. For the fiscal year ended Mar. 31, 1939, imports were valued at 129,550,000

bahts and exports at 206,280,000 bahts (111,780,823 and 180,773,109, respectively, in 1937-38). Cotton piece goods, foodstuffs, and machinery are leading imports and rice, tin ore, rubber, and teak are the chief exports. Trade is mainly with Singapore, Hong Kong, Japan, and the United Kingdom.

Finance. The following table shows the budget totals for the new fiscal year Oct. 1, 1939, to Sept. 30, 1940; the budget for the last full fiscal year on the old basis, Apr. 1, 1938 to Mar. 31, 1939; and the budget for the six-months interim period covering the change from the old to the new fiscal year (figures in thousands of bahts):

Item	Budget Apr. 1, 1938- Mar. 31, 1939	Interim budget Apr. 1, 1939- Sept. 30, 1939	Budget Oct. 1, 1939- Sept. 30, 1940
Revenue.....	109,426	57,933	124,061
Ordinary expenditures. . .	109,398	62,577	124,059
Capital expenditures....	22,109	15,815	22,889

Capital expenditures for 1939-40, of which 13,887,364 bahts was to come from the Treasury reserve and 9,000,000 from loan proceeds, included the following principal items: Highway construction, 6,937,498 bahts; railways, 3,210,990; (other) transportation development, 3,598,200; irrigation, 2,501,553; cotton industry, 1,119,715. Budget returns have shown an excess of revenues over ordinary expenditures in every year since 1932. The accumulated treasury reserve as of Mar. 31, 1939, was about 38,000,000 bahts.

The public debt on Mar. 31, 1939, was equivalent to £740,525 (£796,252 on Mar. 31, 1938), all in sterling loans. The baht (or tical) was pegged at 11 to the pound sterling in 1928; average exchange value in 1938-39, \$0.437.

Transportation. Railways under operation in 1938-39, all State owned, totaled 2058 miles; they carried 5,722,766 passengers and 452,630,248 ton-kilometers of freight. Operating revenues were equivalent to \$6,735,992; operating expenses, \$3,154,896. An agreement for immediate construction of a railway from Mongolborey to Aranya, connecting Thailand and French Indo-China for the first time, was signed by the two governments in 1939. Highways totaled 3398 miles (see **ROADS AND STREETS**). Bangkok is served by the Imperial Airways and Air France systems. A native air line connects the chief cities of northern Thailand. Improvement of the port of Bangkok at a cost of 10,000,000 bahts to permit entrance of larger vessels was under way in 1939. The shipping tonnage entered there with cargo in 1938 was 888,000; cleared, 1,176,000.

Government. The constitution of Dec. 10, 1932, changed Thailand from an absolute to a limited monarchy. There is an Assembly of 182 members, half elected and half appointed by the Crown, and a Council of State (cabinet) responsible to the Assembly. Premier and Minister of Defense, Foreign Affairs and Interior in 1939, Luang Bipul Songgram (appointed Dec. 17, 1938). The Council of Regency, serving during the King's minority, is headed by Prince Aditya Dibabha.

History. Charges that the Thai Government had closed Chinese schools, arrested many Chinese, and prohibited the remittance of funds to China by Chinese banks in Thailand were made by Chinese authorities at Chungking early in August, 1938. These charges conflicted with the report made by the Chinese Minister of Communi-

cations, Chang Chia-ngau, who visited Thailand in May, 1939. He said he found governmental policies and public sentiment at Bangkok increasingly favorable to China. Later in the year Gen. Chiang Kai-shek sent a telegram to Premier Songgram asking adequate protection for the lives and property of Chinese in Thailand. A reply from Songgram, published at Chungking on December 31, pledged adequate protection and guaranteed to Chinese the right "to engage in local pursuits throughout the kingdom."

The boy King, Ananda Mahidol, who had arrived in Bangkok Nov. 15, 1938, for a visit to his country, left for Switzerland to resume his education on Jan. 13, 1939. A crowd of 300,000 persons gave him a royal send-off. His great popularity was believed to have eliminated sentiment favorable to the establishment of a republic. It was reported from Bangkok on November 24 that a conservative insurrection against the government had been suppressed and 21 of the leaders sentenced to death. Among them were two of ex-King Prajadhipok's grandsons. A death sentence imposed upon a son of the late King Chulalongkorn, who commanded the Siamese expeditionary forces in the World War, was commuted. Twenty-two other conspirators received life sentences. See **NAVAL PROGRESS**.

THANKSGIVING DAY, DATE OF. A proclamation of President Roosevelt's, issued October 31, designated November 23 to be Thanksgiving Day. This broke with the long-fixed custom of holding Thanksgiving on the last Thursday of November. The President let it be known through the press (issues of August 16 and 31) that he would thus change the usual date, and that he intended thereby to give a week more for the retail trade in advance of Christmas. See **BUSINESS REVIEW**. The announcement was made August 30, in response to inquiry from makers of calendars and cards, that in 1940 Thanksgiving would be on November 21.

Individuals and officers of a number of States opposed the change. In 22 States the 23d was made the legal holiday or day of observance; in 23 States, the 30th (the traditional last Thursday of the month); and in three States both days were observed. From this disagreement arose some inconvenience, as in the case of railroads' holiday schedules and in that of students' return home from institutions in States that did not keep the same holiday as such students' home States.

The Associated Press thus tabulated the States according to the dates they observed:

Nov. 23			Nov. 30	
California	New York	Alabama	Minnesota	
Delaware	North Dakota	Arizona	Nebraska	
Georgia	Ohio	Arkansas	Nevada	
Illinois	Oregon	Connecticut	New Hampshire	
Indiana	Pennsylvania	Florida	New Mexico	
Louisiana	South Carolina	Idaho	North Carolina	
Maryland	Utah	Iowa	Oklahoma	
Michigan	Virginia	Kansas	Rhode Island	
Missouri	Washington	Kentucky	South Dakota	
Montana	West Virginia	Maine	Tennessee	
New Jersey	Wyoming	Massachusetts	Vermont	
			Wisconsin	

Colorado, Mississippi, and Texas observed both dates.

THEATER. See **DRAMA**; **FRENCH LITERATURE**; **GERMAN LITERATURE**; **LITERATURE, ENGLISH AND AMERICAN**, ETC.

THEOSOPHICAL MOVEMENT, THE. The Theosophical Movement does not aim at increasing the number of its professed adherents; it seeks to effect a change in the mind and the heart of the race, to keep alive in man his spirit-

ual intuitions and to teach the animal-man to be a human-man, with self-conscious divinity as his goal. Its doctrines are the accumulated wisdom of the ages, the truths given out, expressly or by implication, by all the great Teachers and Prophets—truths brought together and restated by Madame H. P. Blavatsky towards the close of the last century, as part of a consistent and an all-embracing philosophy of life.

The publication during 1939, by Theosophy Company, Los Angeles and Bombay, of a full Index to Madame Blavatsky's monumental two-volume work, *The Secret Doctrine*, the most important of modern Theosophical texts, fills a long-felt want. *The Brotherhood of Religions*, by Sophia Wadia, published early in 1939 by the International Book House of Bombay, brings together a number of lectures by a well-known present-day student of genuine Theosophy. The Theosophical Society of America had 4100 members in 1939. Headquarters are in Wheaton, Ill.

THIRD INTERNATIONAL. See COMMUNISM.

"THIRTY DOLLARS EVERY THURSDAY." See OLD-AGE PENSIONS; CALIFORNIA.

THURINGIA. See GERMANY.

TIBET, tî-bê't'; tîb'ët. A territory in central Asia, nominally under Chinese suzerainty. Area, 463,200 square miles; population, estimated variously at from 700,000 to 6,000,000. Capital, Lhasa (pop., about 50,000). Lamaism, a form of Buddhism, is the accepted religion; its priests and monks are estimated to total about one-fifth of the population. Agriculture, stock-raising, and hand-craft industries, particularly wool spinning and knitting, are the principal occupations. Gold, borax, and salt are the chief minerals produced. There is a factory for army equipment, uniforms, coins, and paper money.

The Dalai Lama, whose palace (the Po-ta-la) is near Lhasa, is head of both the Lamaist religion and of the Tibetan government. Normally he shares his religious authority with the Tashi (Panchen) Lama and delegates his political authority to a prime minister and grand council. After the death of the last Dalai Lama in 1933, his powers were assumed by a regent. The Tashi Lama, expelled from Tibet by the Dalai Lama in 1924, died in exile in Western China in 1937, thus leaving Tibet without either of its spiritual leaders.

History. The five-year search for a new Dalai Lama ended in September, 1939, when a baby boy, reported to be four years and three months old, was accepted by the Regent and government of Tibet as the reincarnation and successor of the last ruler. According to Lamaist dogma, the spirit of the departed Dalai Lama is embodied in a new-born baby. After a number of infants were tested and rejected, Lamaist monks found a peasant Chinese boy in a tiny village in Kokonor who passed the necessary tests. With armed guards and a great caravan of followers, he was taken on a 1000-mile journey to Lhasa, where late in September a secret conclave accepted him as Tibet's spiritual and temporal ruler. A solemn enthronement ceremony was performed at Rigya near Lhasa early in October.

The new Dalai Lama became the focus of the struggle for predominance among Tibetan factions and between the Chinese and British (see 1938 YEAR BOOK, p. 726). Representatives of the Chungking Government went to Lhasa to witness the enthronement of the boy ruler, while the

Viceroy and Government of India sent messages wishing the new Dalai Lama long life and prosperity. The partisans of the former Dalai Lama, who was pro-British in sympathies, were believed to be in control.

TIMOR, tê-môr', PORTUGUESE. A Portuguese possession in the Malay Archipelago, comprising the eastern part of the island of Timor together with the territory of Ambeno and islands of Pulo Cambing and Pulo Jako. Total area, 7330 square miles; population (1938 estimate), 460,000. Capital, Dilli (or Dili). The chief exports are copra, coffee (1000 metric tons, 1937), sandalwood, sandal-root, and wax. There are 496 miles of roads (On Sept. 4, 1939, the Portuguese home government granted a loan of 400,000 escudos to Timor to repair roads and other State properties damaged by heavy winds and rainfalls in the preceding April and May). Public revenue and expenditure (1938) balanced at 13,410,650 escudos (Escudo averaged \$0.0443 in 1938).

TIN. World production of tin is largely determined by the International Tin Control which allots quotas to the countries signatory to the scheme of restriction. Organized ostensibly for the stabilization of production, the I.T.C. in 1939 exerted its influence also for the stabilization of prices in the London market. The signatory countries are Belgian Congo, Bolivia, French Indo-China, Malaya, Netherlands East Indies, Nigeria, and Thailand (Siam). These countries produce more than 80 per cent of the world's tin.

Under the International Tin Control scheme, standard tonnages of production are assigned by agreement to the signatory countries. Production is then controlled by setting quotas, or percentages of standard tonnages, to which the signatory countries conform. These quotas may vary widely and are usually set each quarter. Thus for 1939, the successive quarterly quotas were 45 per cent, 40 per cent, 120 per cent, and 100 per cent. Quotas of 100 per cent represent a production of 200,000 to 208,000 long tons per annum. World tin production for 1939, according to the International Tin Research & Development Council, is estimated at 183,700 tons. Apparent world consumption for 1939 is estimated at 165,700 tons. Tin stocks at the end of 1939 were 50,700 tons, or 29 per cent of current annual rate of consumption.

London prices for standard spot tin in 1939 ranged from £217 per long ton in January to £230 on December 8. With the removal of restrictions by the British Ministry of Supply, the price rose sharply on December 9 to £271, declining to £250 at the year end.

New York average monthly prices for Straits tin ranged from 46¢ per lb. in January to 64½¢ in September, and closed the year at 50¢ in December.

Inasmuch as the United States produces no tin, but is nevertheless the largest user of the metal (approximately 60,000 tons in 1939) consumers are dependent on supplies from producing countries. Tin is, therefore, regarded by the United States as a "strategic" metal for the Army and Navy, and steps were taken in 1939 to build domestic stockpiles of the metal, in accordance with the Strategic Minerals Act of 1939. Late in the year the Procurement Division of the Treasury Department announced the award of five contracts for the purchase of 6,560,000 lb. of pig tin, delivery guaranteed in six months. Allotments ranged from 200,000 lb. to 2,000,000 lb., and

prices ranged from 47.16¢ to 48.25¢ per lb. Steps were taken also to conserve tin supplies in the United States. The State Department issued regulations governing licenses for the exportation of tin-plate scrap. See METALLURGY.

H. C. PARMELEE.

TIRES. See BUSINESS REVIEW; RUBBER.

TIROL. See AUSTRIA; ITALY under History.

TOBACCO. The tobacco crop of 1939, the largest ever produced in the United States, was estimated at 1,769,639,000 lb., about 29 per cent above the 1938 crop of 1,376,471,000 lb., and comparing with the 10-year (1928-37) average production of 1,360,400,000 lb. The harvested acreage, the fifth largest in history, totaled 1,942,200 acres compared with 1,600,500 in 1938, while the 1938 average acre yield was 911 lb., also a record, compared with 860 lb. in 1938. The value of the crop was estimated at \$269,966,000 for the 1939 crop versus \$269,876,000 for 1938. The price per pound received by farmers averaged 16.0¢ on November 15, and 13.8¢ on Dec. 15, 1939 versus 18.1¢ in December, 1938. Production by types was estimated for flue-cured, 1,117,594,000 lb.; fire-cured, 98,522,000; air-cured, light: Burley, 361,434,000 and Southern Maryland, 29,796,000; air-cured, dark, 36,285,000; and cigar types, 126,008,000, comprising filler, 53,013,000; binder, 61,414,000; and wrapper, 11,581,000 lb. All classes of tobacco showed increased production over 1938 with the largest increases in flue-cured, which was 42 per cent more than the 1938 crop and about 59 per cent above the 10-year average production. North Carolina again led producing States with 773,810,000 lb., and was followed by Kentucky with 320,668,000; Virginia 138,232,000; South Carolina 130,200,000; Tennessee 102,716,000; Georgia 96,620,000; Pennsylvania 36,239,000; Wisconsin 31,406,000; Maryland 29,796,000; Ohio 28,842,000; Connecticut 25,590,000, and Florida 23,410,000 lb.

The 1939 crops in other important producing countries, as estimated, were for Turkey 121,253,000 lb.; Japan 180,802,000; Greece 125,660,000; Bulgaria 77,933,000; Germany 82,500,000; Hungary 48,852,000; Cuba 44,502,000; Yugoslavia 40,786,000; Canada 108,770,000; Southern Rhodesia 23,396,000; Chosen (Korea) 68,385,000; China (flue-cured) 115,000,000; South Manchuria 41,500,000 lb.; and Sumatra 135,000 bales. In 1938-39, Mexico produced 41,723,000 lb.; Argentina 40,490,000; Nyassaland 17,929,000; Australia 3,922,000; and British India 1,124,480,000 lb. Flue-cured leaf produced in the principal foreign countries in 1938-39 was estimated at about 384,000,000 lb., 16 per cent greater than in 1937-38; and the combined production of this type in 1939 in China, Japanese Empire, India, Netherland Indies, and Siam was estimated at 280,000,000 lb., versus 220,000,000 in 1938.

Collections from internal revenue taxes on tobacco in the United States for the fiscal year 1939 amounted to \$580,159,206, an increase of \$11,977,238 or 2.1 per cent over 1938. Receipts from taxes on small cigarettes amounted to \$504,036,932, which was 86.9 per cent of the total taxes collected on tobacco, and \$10,603,973 over 1938. Taxes collected on smoking and chewing tobacco rose to \$54,757,044 in 1939 from \$53,982,098 in 1938; increased on large cigars to \$12,792,550, a gain of \$41,635; and on snuff rose to \$6,932,019, a gain of \$253,166 compared with 1938. The greater part of the total tobacco receipts were collected in North Carolina, Virginia, Kentucky,

New Jersey, Pennsylvania, California, and Ohio in the same order as in 1938. In the calendar year 1938, the Commissioner of Internal Revenue reported, 171,686,382,670 cigarettes weighing less than 3 lb. per 1000 were manufactured, compared with 169,969,319,880 in 1937. Exports of unmanufactured tobacco totaled 489,093,865 lb. worth \$155,670,580 in 1938 and 358,811,605 lb. worth \$77,414,043 in 1939. See BUSINESS REVIEW; TAXATION.

HENRY M. STEECE.

TOGO, FRENCH. The part of the former German West African protectorate mandated to France by the League of Nations. Area, 21,893 square miles; population (1938 estimate), 781,000, including some 450 Europeans. Lomé, the capital, had 14,389 inhabitants, including 283 Europeans, in 1936. Chief crops, with 1938 production figures in metric tons, are: Cacao, 2800; cotton seed, 4300; groundnuts, 7200; copra, 2600; palm oil, 500; palm kernels, 3700. In 1938 imports were valued at 73,750,000 francs; exports, 66,550,000 francs. There were (1937), 3105 miles of roads suitable for automobile transportation and 242 miles of railway line. The budget for 1939 was balanced at 58,923,000 francs.

TOGOLAND. The part of the former German protectorate of Togo, confirmed as a British mandate by the League of Nations, and attached to the British Gold Coast Colony and Northern Territories for administrative purposes. Area, 13,041 square miles; population (1938 estimate), 370,327 of whom 43 were non-Africans. Cacao (12,700 metric tons, 1938), and palm kernels are the chief products.

TOKELAU. See UNION ISLANDS.

TOLEDO, UNIVERSITY OF THE CITY OF. A municipal, coeducational institution of higher learning in Toledo, O., founded in 1872. The enrollment for the autumn of 1939 totaled 2982 of whom 2188 were day-session students and 794 evening session students. The faculty had 102 full-time and 33 part-time members. The 1939 summer session enrollment was 518. The value of grounds, buildings, and equipment was \$4,000,000 and the income for 1938-39 was \$587,159. The library contained 75,511 volumes. President, Philip Curtis Nash, Dr. Engr. LL.D.

TOLLER, töl'ēr, ERNST. A German writer, committed suicide in New York, May 22, 1939. Born in Samotschin, Germany, Dec. 1, 1893, he was educated in the universities of Heidelberg, Munich, and Grenoble. During the World War he saw service in the German Army until 1917 when he was invalided home. Thereafter he was a worker in radical and pacifistic movements and was president of the Central Council of Workers and Soldiers in the soviet republic, Bavaria (1918-19). Arrested for his political activities in 1919, he was sentenced to five years in prison. While imprisoned he wrote much of his early work, including *Masses and Man* (1921), which was produced on the New York stage by the Theatre Guild in 1924. Upon his release he became active in the work of the League for Human Rights, and in 1933 upon the rise of the Nazi regime he was deprived of his citizenship and exiled. Until 1936 he lived in London, where he became a British citizen, but later he removed to New York City. During the Spanish Civil War he was active in supplying food and medicine to the Spanish children.

Mr. Toller's works included the autobiographi-

cal *I Was a German*, published in New York in 1934 under the title, *Learn from My Youth; Letters from Prison* (American edition, *Look Through the Bars*, 1937); *Moscow and Madrid*. His plays, besides *Masses and Man* were *Transformation* (1919); *The Machine Wreckers* (1921); *Hinkemann* (1922); *Draw the Fire!*; *Marv Baker Eddy*, *The Blind Goddess*; *No More Peace*; *Blind Man's Buff* (with Denis Johnston); *The Revenge of the Scorned Lover*; *The Night is Far Spent*. *Seven Plays* was published in 1936, and a volume of poetry, *The Swallow Book*, appeared in 1923.

TONGA (FRIENDLY) ISLANDS. A kingdom under British protection in the South Pacific, comprising three main groups of islands called respectively Tongatabu, Haapai, and Vavau, together with the outlying islands Niuafoou, Niuaotubutu, and Tafahi. Total area, 385 square miles; population (1938 census), 33,785 including 1295 non-Tongans. Capital, Nukualofa. Copra, bananas, citrus fruits, and native vegetables are the chief products. In 1938, imports were valued at £82,795; exports, £98,436. For the year ended June 30, 1938, revenue totaled £69,242; the expenditure for the same year amounted to £62,742. Queen, Salote Tubou (succeeded Apr. 12, 1918).

TONKIN (TONGKING). See FRENCH INDO-CHINA

TOOTH DECAY AND TREATMENT. See DENTISTRY.

TOPOGRAPHY. See GEOLOGICAL SURVEY; SOILS.

TORNADOES. See METEOROLOGY.

TORONTO, UNIVERSITY OF. An institution of higher education in Toronto, Ont., Canada, founded in 1827 and supported by the provincial government. The 1939 autumn enrollment was 7202. The faculty numbered 1057 members. The total expenditure for the year 1938-39 for salaries and maintenance was \$3,002,677. The library contained 368,280 volumes and 140,500 pamphlets. President, Henry John Cody, M.A., D.D., LL.D.

TOWN AND CITY PLANNING. See PLANNING.

TRACK AND FIELD ATHLETICS. See SPORTS

TRADE. See BUSINESS REVIEW; FEDERAL TRADE COMMISSION; IMPORTS AND EXPORTS; INTERSTATE COMMERCE COMMISSION; MARKETING; TRADE AGREEMENTS; sections on *Foreign Trade* under the various countries.

TRADE AGREEMENTS, RECIPROCAL. For reasons indicated under NEUTRALITY, the war in Europe impelled the United States to new efforts to make and in other cases to revise trade agreements with other governments in the Americas. For discussion of particular trade agreements or of negotiations toward them, see also ARGENTINA, CANADA, CUBA, GREAT BRITAIN, TURKEY, URUGUAY, and VENEZUELA under *History*.

Tariffs as affected by the various trade agreements are set forth in special reports prepared by the U.S. Trade Commission. Its pamphlet summary of the agreements is obtainable from the Superintendent of Documents, Washington, D. C. A summary of the provisions of each agreement appeared in *Commerce Reports* promptly after the signing.

The accompanying table lists all trade agreements between the United States and other governments, signed under the provisions of the Re-

ciprocal Tariff Act of 1934, up to the close of 1939.

UNITED STATES TRADE AGREEMENTS

Country	Date signed	Date effective
Cuba	Aug. 24, 1934	Sept. 3, 1934
" (supplementary)	Dec. 18, 1939	Dec. 23, 1939
Belgium	Feb. 27, 1935	May 1, 1935
Haiti	Mar. 28, 1935	June 3, 1935
Sweden	May 25, 1935	Aug. 5, 1935
Brazil	Feb. 2, 1935	Jan. 1, 1936
Canada	Nov. 15, 1935	Jan. 1, 1936
" (revision)	Nov. 17, 1938	Jan. 1, 1939
" (supplementary)	Dec. 30, 1939	Jan. 1, 1940
Netherlands	Dec. 20, 1935	Feb. 1, 1936
Switzerland	Jan. 9, 1936	Feb. 15, 1936
Honduras	Dec. 18, 1935	Mar. 2, 1936
Colombia	Sept. 13, 1935	May 20, 1936
Guatemala	Apr. 24, 1936	June 15, 1936
France and dependencies except Morocco	May 6, 1936	June 15, 1936
Nicaragua	Mar. 11, 1936	Oct. 1, 1936
Finland	May 18, 1936	Nov. 2, 1936
Salvador, El	Feb. 19, 1937	May 31, 1937
Costa Rica	Nov. 28, 1936	Aug. 2, 1937
Czecho-Slovakia	Mar. 7, 1938	Apr. 16, 1938
Ecuador	Aug. 6, 1938	Oct. 23, 1938
United Kingdom, Newfoundland, and British colonies	Nov. 17, 1938	Jan. 1, 1939
Turkey	Apr. 1, 1939	May 5, 1939
Venezuela	Nov. 6, 1939	Dec. 16, 1939

* Certain provisions of agreement with Nicaragua lapsed, Mar. 10, 1938. * Czecho-Slovakian agreement suspended, Apr. 22, 1939.

While disturbed conditions in Europe and Asia worked against negotiating further trade agreements there in 1939, proceedings for a new agreement with Belgium, to supersede that of 1935 were started on August 16. They had not concluded at the end of the year. The suspension of the agreement with Czecho-Slovakia in April followed Germany's suppression of the political existence of that country.

In Latin-America the United States sought trade agreements, during 1939, with three governments. It began negotiations, August 23, with Argentina. On October 2 it started proceedings with Chile. The subject was opened with Uruguay on October 20. Negotiations with Argentina and with Uruguay both fell through early in 1940. Those with Chile were listed as unfinished at the end of 1939. The agreement with Venezuela, shown in the accompanying table, was the single addition to the list of agreements in Latin-America in 1939.

Effect on U.S. Commerce. Figures on the United States' imports and exports in trade, respectively with those nations that had entered into trade agreements and those that had not, were published by the Department of Commerce. These figures did not provide thoroughgoing comparisons, as to different periods of time, for the list of nations trading with the United States under agreements varied from year to year. The figures, however, showed that, for the first 11 months of 1938 and 1939, averaged, the United States exported more, by \$420,000,000, or 60.5 per cent, to the mainly growing number of nations with trade agreements than the average for the corresponding months of 1934 and 1935; and that it imported (same months of 1938 and 1939, averaged) more from these nations by only \$156,000,000, or 22.1 per cent, than for the earlier period. Dealing with the decreasing group of countries having no trade agreements, the United States exported more (11 months, 1938-39, averaged) by \$265,000,000, or 29.6 per cent than for the earlier period (11 months, 1934-35, averaged) and imported more by \$75,000,000, or 10.6 per cent. For further details, as to totals of trade with nations having trade agreements, etc., see *Commerce Reports*, Jan. 20, 1940, pp. 61-63.

The figures did not indicate that the reciprocal agreements had materially altered the ratio of imports to exports as between the two groups of nations. The failure of the agreements to accomplish a rise of the ratio of imports to exports did not gratify the school that thought it necessary for the United States to become more of an importing nation and so to give others the means to pay for U.S. exports. On the other hand, producers of some leading raw materials in the United States objected to the reciprocal agreements' allowing the United States to import more of goods produced in the United States. Definite protests were offered, purportedly on behalf of producers in the United States, to lowering barriers against imports coming from abroad to compete with goods produced within the Union. Such was the case with the proposed reduction of the tax, at four cents a lb., on foreign copper, which was thought likely to become part of the yet unconcluded agreement with Chile; likewise, the halving of the excise tax of 22 cents a barrel on imports of petroleum, allowed on petroleum from Venezuela. While a few such cases underwent discussion on a national scale, many less conspicuous reductions of tariffs, not so widely felt in any single case as to get general attention, nevertheless in the aggregate affected the set of public sentiment.

Political Phase of Trade Agreements. The system of reciprocal trade agreements had existed and grown for about five years without stirring up serious political opposition. Late in 1939 this happy immunity ended. Senators McNary, Vandenberg, Capper, and Borah on the Republican side, and the Democratic Senators Pittman, Johnson (of Colorado), Wheeler, and McCarran expressed themselves against features of the trade agreements, while in the House of Representatives the Republican leader, Martin of Massachusetts, formed a special committee, under the guidance of Treadway of Massachusetts to find out how the new reciprocity affected domestic commerce and production.

The defense of the agreements fell to the duty of Secretary of State Hull, their progenitor and natural protector. He repeatedly (e.g., November 24, December 17) drew comparisons between the results of the trade agreements and those of the "Smoot-Hawley embargo" (tariff of 1930), the achievement of a Republican Congress of which both McNary and Vandenberg, his most conspicuous opponents, were survivors. He declared before the Farm Bureau Federation, at Chicago (December 6), that the United States "must not be drawn into war"; that the only alternative to the trade agreements was a return to the "Hawley-Smoot embargo policy"; and that "grave mistakes of policy on the part of the United States" and other nations had contributed in the '20's to the general economic breakdown; and he pointed to sound international trade as needful to any hope of enduring peace. The Federation, after hearing his address approved the policy of trade agreements, yet apparently shied at possible subordination of the domestic interest to ulterior considerations of international peace and demanded that future trade agreements "give economic factors consideration equivalent to the weight accorded to the factors of diplomacy and statecraft." It urged that the reciprocal trade and tariff act be amended to require the Secretaries of Commerce and of Agriculture, as well as the Secretary of State, to approve further agreements.

While in the main discussing the general features of his policy, Hull in some instances went into the difficult question of the merits of particular balance between advantage and disadvantage in an agreement with a specified nation; thus in a letter to Governor Ratner of Kansas he maintained that Venezuela's concessions on lard, wheat flour, etc., would help that State more than the lowering of barriers against Venezuelan petroleum would hurt.

The controversy was still hot at the end of the year. Behind it rose the prospect of effort in Congress to prevent the renewal of the delegation of power to make trade agreements, a power destined otherwise to lapse in June, 1940.

See INTERNATIONAL LAW.

TRADE UNIONS. INTERNATIONAL FEDERATION OF. See COMMUNISM.

TRAFFIC SAFETY. See AUTOMOBILES.

TRANS-JORDAN. An Arab territory in Asia Minor, under mandate to Great Britain. Area, 34,740 square miles; population, estimated at 312,000 (305,000 Arabs and 7000 Circassians and Chechens). All the inhabitants, except some 25,000 Christian Arabs, are Moslems. Chief towns: Amman (capital); Es-Salt. Education (1937-38): 172 schools and 12,934 pupils.

Production and Trade. A large part of the country consists of desert lands but in the west the land is fertile and suitable for agricultural pursuits and for livestock raising. Tobacco has been successfully grown and the output is greater than the requirements of the local factories. Phosphate deposits have been developed; potash is found in the Dead Sea. A company has been formed to exploit the oilfields already explored. **Overseas trade (1937):** Imports, £P934,211 (including specie, £P4530); exports, £P708,378 (including specie of £P182,550 and re-exports of £P14,860). There were 611 miles of roads in 1938. The Trans-Jordan section (213 miles) of the Haifa-Bagdad road was under construction during 1939. Railways (narrow gauge) extended 200 miles.

Government. Finance (1937-38): revenue, £P459,150 (including a grant from the Imperial government of £P19,000); expenditure, £P462,710. The public debt on Dec. 31, 1937, totaled £P262,028. The territory is part of the British Palestine Mandate, but certain clauses relating to the establishment of a national home for the Jews are excluded from operation within Trans-Jordan. On May 16, 1939, the British government announced the conclusion of an important agreement with the Emir of Trans-Jordan, Sir Abdullah ibn Hussein, who will in future exercise authority through a council of heads of departments responsible to himself instead of having an executive council with advisory powers. The legislative power is vested in a council of 16 members elected by universal manhood suffrage (9 Moslem Arabs, 3 Christian Arabs, 2 Circassians, 2 Bedouins) and 6 official members (the chief minister and the heads of departments). A British Resident (A. S. Kirkbride, appointed Feb. 16, 1939), represents the High Commissioner for Palestine and Trans-Jordan.

History. During May, 1939, the British government announced the conclusion of an agreement with the Emir of Trans-Jordan which provides that (in place of the executive council) a council of ministers, or cabinet, be formed with each member being responsible to the Emir; the restriction on the Emir's powers of raising and

maintaining military forces will be removed; the Emir will be allowed to appoint consular representatives in certain neighboring Arab countries. Residents of Trans-Jordan, dating from June 1, 1939, must show a passport or other valid document when entering Palestine; formerly no passports were required by residents of Trans-Jordan and Palestine wishing to visit each other. See PALESTINE under *History*.

TRANSOCEANIC AIRPLANE SERVICE. See AERONAUTICS.

TRANSPORTATION. See AERONAUTICS; AUTOMOBILES; ELECTRICAL TRANSPORTATION; RAILWAYS; ROADS AND STREETS; RAPID TRANSIT; SHIPBUILDING; SHIPPING.

TRANSVAAL. See SOUTH AFRICA, UNION OF.

TREASURY, U.S. DEPARTMENT OF THE. Henry Morgenthau, Jr., of New York was Secretary of the Treasury during 1939. John W. Hanes the Under Secretary was succeeded by Daniel W. Bell on Jan. 1, 1940; Preston Delano was Comptroller of the Treasury; W. A. Julian, Treasurer of the United States, and Guy T. Helvering, Commissioner of Internal Revenue. Following the administrative reorganization of July 1 (see under UNITED STATES), the Public Health Service (q.v.) was removed from the jurisdiction of the Treasury Department and transferred to the Federal Security Agency; the Bureau of the Budget was transferred to the Executive Office and the public buildings branch of the Procurement Division to the Federal Works Agency. At the same time the Treasury Department took over the Bureau of Lighthouses and consolidated it with the Coast Guard. Officials of the Treasury were charged with carrying out the provisions of the President's neutrality proclamation, following the outbreak of the European War in September. Basil Harris, who was sworn in as Commissioner of Customs and Assistant to the Secretary on September 7, became the chief neutrality enforcement officer. Herbert E. Gaston, assistant secretary, became head of a committee appointed to co-ordinate the enforcement agencies of the Treasury. Secretary Morgenthau appointed an advisory committee of three prominent financial men and three economists to advise the Treasury throughout the crisis as "dollar-a-year" men. For activities of the Department, see BANKS AND BANKING; NARCOTICS CONTROL; PUBLIC FINANCE, TAXATION, and separate articles on the following divisions: COAST GUARD, CUSTOMS, BUREAU OF, and FEDERAL ALCOHOL ADMINISTRATION.

TRENGGANU. See UNFEDERATED MALAY STATES.

TRINIDAD AND TOBAGO. A united British crown colony near Venezuela, comprising the islands of Trinidad (1862 sq. mi.) and Tobago (116 sq. mi.), and adjacent islands. Total area, 1980 square miles; total population (Jan. 1, 1939, estimate), 464,889 compared with (1931 census) 412,783. During 1937 there were 14,226 births (31.46 per 1000), 7848 deaths (17.36 per 1000), and 2608 marriages (10.38 per 1000). Chief towns: Port of Spain (Trinidad), the capital, 77,711 inhabitants; San Fernando, 15,858; Princetown, 5580; Arima, 5613; Scarborough (Tobago), 1371; Roxborough (Tobago), 1515. The 302 schools (287 primary, 6 intermediate, and 9 secondary) had a total of 77,092 pupils enrolled for the year 1937.

Production and Trade. Crude oil (17,737-201 bbl.), asphalt (127,859 tons), cacao (18,000 tons), citrus fruits, sugar (133,627 tons), coco-

nuts, coffee, timber, and bananas (80,506 bunches) were the principal products in 1938. The sugar quota for the year ending Aug. 31, 1939, was fixed at 144,700 tons (132,200 for export and 12,500 for local consumption). Minerals found in small quantities include coal, iron, graphite, gypsum, and gold. In 1938, imports were valued at \$35,497,121 (machinery, foodstuffs, metal manufactures, cocoa, and timber were the main items); exports, including re-exports, \$35,367,764 (petroleum \$23,658,166, asphalt \$1,131,078, sugar \$4,957,963, molasses \$139,441, rum and bitters \$186,529).

Communications. There were, in 1938, some 1844 miles of roads and 123 miles of railways. Air mail and passenger services are maintained by Pan American Airways with the United States, South America, and other parts of the West Indies. Three wireless stations are operated by the government. In 1937, 6649 ships with an aggregate tonnage of 4,947,352 entered and cleared the ports.

Government. For the year ended Dec. 31, 1938, revenue totaled \$13,445,235; expenditure, \$12,230,184. Public debt (on Dec. 31, 1938) amounted to \$19,730,304 against which the sinking fund for its redemption stood at \$827,573. Estimates for 1939 indicate revenue of \$12,882,274 and expenditure of \$12,492,118 (including extraordinary expenditure of \$2,383,330). The united colony is administered by a governor who is assisted by an executive council of 7 members, and a legislative council (reconstituted by Letters Patent and an Order in Council effective on Aug. 21, 1924) of 26 members including the governor as president, 12 officials, and 13 unofficial members (of the latter, 6 are nominated by the governor and 7 are elected). There are 6 electoral districts in Trinidad and 1 in Tobago. Governor, Major Sir H. W. Young (appointed February, 1938).

History. It was announced during April of 1939 that the immigration of central European refugees into Trinidad had been banned for economic reasons. On July 1, 1939, the old-age pension ordinance became effective. A review of the causes of the labor market depression in the British West Indies, together with recommendations for improving the general situation, are contained in *Labor Conditions in the West Indies*, by Major Orde Brown (Cmd. 6070; H.M. Stationery Office, London: 1939).

TRINITY COLLEGE. An institution for the higher education of men in Hartford, Conn., founded in 1823 as Washington College and changed to Trinity College in 1845. For the autumn term of 1939 the enrollment was 564. For the 1939 summer session the enrollment was 157. There were 62 members on the faculty. The endowment fund of the college was \$3,538,116 and the income totaled \$356,412. The library contained 135,000 volumes. President, Remsen B. Ogilby, Litt.D., LL.D.

TRIPOLITANIA. See LIBYA.

TRISTAN DA CUNHA, tris-tan' dā kōon'-yā. The chief of a group of islands in the South Atlantic (37° 6' S. and 12° 2' W.), owned by Great Britain. Area, 45 square miles; population (1937), 185. On Jan. 12, 1938, the islands of Tristan da Cunha, Gough, Nightingale, and Inaccessible were made dependencies of St. Helena (q.v.). Resident Chaplain, Rev. Harold Wilde.

TROTSKY. See COMMUNISM; MEXICO under *History*.

TRUCIAL OMAN. See ARABIA.

TRUCKS. See AUTOMOBILES.

TUAMOTU ISLANDS. See OCEANIA, FRENCH ESTABLISHMENTS IN.

TUBERCULOSIS. See VETERINARY MEDICINE.

TUBUAI ISLANDS. See OCEANIA, FRENCH ESTABLISHMENTS IN.

TUFTS COLLEGE. A nonsectarian institution for the higher education of men and women in Medford, Mass., founded in 1852. The registration for the autumn terms of 1939 was 2134. There were 420 faculty members. The productive funds of the college amounted to \$7,839,594, and the income for the year was \$1,373,057. The library contained 190,000 volumes. President, Leonard Carmichael, Ph.D., Sc.D., LL.D., Litt.D.

TULANE UNIVERSITY OF LOUISIANA. An institution of higher education in New Orleans, founded in 1834. The total enrollment for the autumn of 1939 was 4179, of whom 736 were in the H. Sophie Newcomb College for Women. There were 872 students enrolled in the 1939 summer session. The faculty numbered 500. The productive funds for the fiscal year ending Aug. 31, 1939, amounted to \$11,133,825; the income for the year was \$1,569,274. Gifts and bequests to the value of \$694,443 were received. In the libraries there were 239,049 volumes. President, Rufus Carrollton Harris, A.B., LL.B.

TUNGSTEN. The principal use of this metal is in the production of high-speed-tool steels. Other uses are in electric-light and radio-tube filaments, and in the chemical industry. It is produced chiefly in China, with the United States second in rank. Nevertheless, on account of its great industrial importance in war as well as in peace, it is listed as a "strategic" metal by the United States Army and Navy, and is one of such commodities authorized to be purchased for stockpile reserves. The only contract let in 1939 was for 425 tons of tungsten ore from China.

Tungsten ore is sold on the basis of tungstic acid, or tungsten trioxide, contained, with 60-65 per cent as the standard. Prices are quoted per unit (1 per cent) of tungsten trioxide in the ore or concentrate. Prices fluctuated in the United States in 1939, opening the year at \$19.50 per unit in Chinese ore, duty paid, and closing at \$23.50 per unit. For domestic ores and concentrates the prices rose from \$16 @ \$19 in January to \$22 @ \$24 in December.

H. C. PARMELEE.

TUNISIA. A French protectorate in North Africa. Capital, Tunis. With an area of 48,332 square miles, Tunisia had a population of 2,608,313 at the 1936 census, including 2,335,623 Arabs and Bedouins, 59,485 native Jews, 108,068 French citizens, 94,289 Italians, and 7279 Maltese. The population estimate for Jan. 1, 1938, was 2,670,000. The 1936 census populations of the chief towns were: Tunis, 219,578; Sfax, 43,333; Sousse, 28,465; Bizerte, 25,872; Kairouan, 22,991. Moslems comprise 89.5 per cent of the total population. The school attendance on Dec. 31, 1937, was 96,520.

Production. The chief occupations are agriculture, stock raising, fishing and mining. Yields of the chief crops in 1938 were (in metric tons): Wheat, 374,670; oats, 30,000; corn and sorghum, 5500; barley, 100,000; beans, 20,000; olive oil, 25,000; dates, 25,400; wine, 1,975,832 hectoliters (hectoliter equals 26.42 U.S. gal.). The 1937 live-

stock estimates were 507,302 cattle, 3,382,894 sheep, 1,672,352 goats, 144,762 camels, 109,787 horses, 156,554 asses, and 56,615 mules. Output of the chief minerals in 1938 was (in metric tons): Phosphate rock, 1,928,800; iron ore, 821,649; lead ore, 28,793; zinc ore, 1412; mercury ore, 9313; pig lead, 23,786. Wool spinning and weaving, leather working, carpet and pottery making the principal native industries.

Foreign Trade. Imports in 1938 were valued at 1,559,000,000 francs (1,324,000,000 in 1937); exports, 1,353,000,000 (1,141,000,000). The depreciation of the French franc from an average exchange value of \$0.04 in 1937 to \$0.029 in 1938 was a factor in the rise in export values. France supplied 62 per cent of the 1938 imports and took 55.9 per cent of the exports; United States, 3.6 and 5.2, respectively.

Finance, etc. Budget estimates for 1939 placed receipts at 802,631,060 francs (704,151,400 in 1938); expenditures, 802,535,003 (704,061,680). The public debt on Jan. 1, 1938, was 1,009,593,000 francs. Tunisia in 1938 had about 1293 miles of railways, 7728 miles of roads and highways, and air connections with France, Italy, Algeria, and Morocco. See ROADS AND STREETS. In 1937 7011 vessels of 4,735,325 tons entered the ports and 7005 of 4,737,446 tons cleared.

Government. Tunisia is a regency under the control of the French Foreign Office, which acts through a Resident-General who is also Minister of Foreign Affairs for Tunisia. There is a ministry of 11 departments (8 French and 3 Tunisian). The nominal ruler in 1939 was Sidi Ahmed Bey, who succeeded to the throne July 10, 1929. Eirik Labonne became French Resident-General on Oct. 22, 1938.

History. The 1939 budget provided for various increases in existing as well as new taxes, with customs and tobacco and cigarettes furnishing the major portion. Expenditures were expanded by credits for improving agriculture, by the sinking fund of a 36,000,000-franc loan negotiated in 1939, and by increases for government employee allowances.

Tunisia remained during 1939 a source of active controversy between France and Italy (qq.v.). The immediate issue in dispute was the status of some 90,000 persons of Italian birth or ancestry in the regency. The conviction in French official circles that Mussolini was determined to employ this issue as a lever for overturning French rule and himself seizing possession of the colony added to the difficulties of a friendly solution. Italian efforts to incite the native Moslems against the French authorities were nullified by Moslem indignation at Italy's racial and foreign policies. While a number of Italians in Tunisia were arrested for anti-French activities during the year, it was reported that many Italians volunteered for service in the French army when war between France and Germany broke out in September. Several anti-Fascist Italian groups adopted resolutions affirming their loyalty to France. Meanwhile French colonial and military authorities had taken extensive precautions to strengthen the Tunisian coast and frontier defenses. See ALGERIA, FRANCE and ITALY under History. Consult Vera Micheles Dean, "Italy's African Claims Against France," *Foreign Policy Reports*, June 1, 1939.

TUNNELS. The completion of the remarkable and difficult tunneling work (108 miles) of the Colorado River-Los Angeles Aqueduct (see

AQUEDUCTS) brings to a successful close one of the greatest tunneling operations ever attempted by man. The new Catskill Aqueduct (85 miles) is, of course, a tremendous tunneling operation but will apparently not involve any such difficult conditions of water inflow and loose ground as were encountered in the former work. Large quantities of water are being encountered, however, in the Hudson River crossing (600 ft. below sea level) but the rock is, in general, sound and hard.

In New York City the Queens-Midtown vehicular tunnel under the East River was holed through on November 8 and this project thus passes into its final stage. There has been much discussion of the plan, first, of building a suspension bridge to connect the southern tip of Manhattan Island with Brooklyn, and, more recently, of a vehicular tunnel. The bridge project was turned down by Government authorities on the grounds that any failure due to bombing might obstruct passage to the Brooklyn Navy Yard. The tunnel project, however, will cost about twice as much as a bridge (70 to 90 million dollars) and, while the plans have been approved by the Army Engineers, the problem of finances still remains to be solved.

The remarkable project of utilizing an abandoned railroad for a new super-highway in Pennsylvania—between Pittsburgh and Harrisburg—(see 1938 YEAR BOOK) went rapidly forward during the year. The estimated cost of this toll line has been raised to \$70,000,000 and the funds are being provided by the PWA, the RFC, and the Pennsylvania Turnpike Commission.

JAMES K. FINCH.

TURBINES. See POWER PLANTS.

TURF. See SPORTS.

TURKEY. A republic comprising parts of Asia Minor and the Balkan peninsula as well as Imbros, Tenedos, and the Rabbit Islands in the Aegean Sea. Capital, Ankara (Angora).

Area and Population. The area, excluding 452 square miles of marshes and 3256 square miles of lakes, is 294,492 square miles (13,012 in Europe and 281,480 in Asia). The population on Jan. 1, 1938, was estimated at 16,800,000 of whom 1,320,000 were in Europe. Populations of the chief cities in 1935 were: Istanbul (Constantinople), 740,805 in the municipality and 245,982 in the city proper; Izmir (Smyrna), 170,546; Ankara (Angora), 123,699; Adana, 76,306; Bursa (Brusa), 72,270; Konya, 52,486; Gazi Antep (Aintab), 50,891.

National Defense. Military service is compulsory. On Nov. 1, 1939, the army consisted of 510,000 active soldiers and 200,000 trained reserves, according to the Adjutant General's Office, Washington, D. C. The air force comprised 3500 men and 370 aircraft. At the beginning of 1939 the navy included 1 battle cruiser of 23,100 tons, 2 light cruisers, 2 gunboats, 3 minesweepers, 4 destroyers, 5 submarines, 3 motor torpedo boats, and several other craft. Naval personnel numbered 800 officers and 4000 men.

Education and Religion. Illiteracy decreased from 78 per cent in 1928 to 55 per cent in 1934. Elementary education is obligatory for children, enrollment in 1936-37 totaling 814,407. There is a university at Ankara. In 1935 there were 15,838,673 Moslems, 125,046 Orthodox Church members, 78,730 Jews, 44,526 Gregorians, 32,155 Roman Catholics, 11,229 Armenians, 8486 Protestants, and 12,967 adherents of other religions. There is no state religion.

Production. Four-fifths of the population is supported by agriculture. Yields of the chief crops in 1938 were: Wheat, 156,006,000 bu.; barley, 108,413,000 bu.; rye, 17,193,000 bu.; oats, 15,436,000 bu. (1937); corn, 23,759,000 bu.; tobacco, 121,253,000 lb.; olive oil (1938-39 season), 6,605,000 gal.; raisins, 176,368,000 lb.; figs, 83,775,000 lb.; ginned cotton (1938-39 season), 172,080,000 lb.; wool, 58,704,000 lb.; mohair, 16,530,000 lb.; opium, 553,000 lb. The 1938 livestock census showed 5,896,000 cattle; 17,752,000 sheep; 14,804,000 goats (including 3,749,000 mohair goats); 586,000 buffaloes; 95,000 camels; 1,817,000 horses, mules, and asses.

Production of the chief minerals in 1938 was (in metric tons unless otherwise indicated): Coal, 2,559,000; lignite, about 130,000; emery, 8370; chrome ore, 208,055; boracite, 5000; cement, about 480,000; mercury, 44,992 lb. Industrial plants in operation or course of construction in 1939 (under the second four-year industrialization plan begun in 1938) included textile mills, coking and steel and blast-furnace works, paper mills, attar-of-roses distillery, a glass factory and sulphur plant. Cotton goods manufacture in 1938 totaled 7900 metric tons of yarn and 10,000 metric tons of cloth. Refineries produced 42,526 metric tons of sugar. There were 65,245 industrial establishments in 1936.

Foreign Trade. Total imports in 1938 were valued at 149,836,689 Turkish pounds (114,379,026 in 1937) and exports at 144,947,000 Turkish pounds (137,983,551 in 1937). The chief exports were tobacco and other agricultural products. Germany took 42.9 per cent of Turkey's 1938 exports; the United States 12.3 per cent; Italy 10.0 per cent; followed by Russia and Great Britain in order. Germany supplied 47 per cent of the imports; Great Britain, 11.2 per cent; the United States, 10.5 per cent; with Italy and Russia trailing respectively. See IMPORTS AND EXPORTS.

Finance. Estimated budget revenues for the fiscal year ending May 31, 1940, were £T261,110,000 (£T250,040,000 in 1938-39); expenditures were £T261,064,192 (£T249,954,020 in 1938-39). A supplementary budget of £T58,917,000—almost half of it for defense measures—was also adopted for 1939-40. The public debt on May 31, 1938, was £T533,614,000 (consolidated internal, £T180,493,000; consolidated external, £T143,200,000; floating internal, £T165,660,000; floating external, £T44,261,000). The average exchange value of the Turkish £ was \$0.8013 in 1937 and \$0.8011 in 1938.

Transportation. On Jan. 1, 1939, Turkish railways extended 4444 miles, including 3903 miles of standard gauge. Highway mileage (1938) was 25,657 of which 11,213 was surfaced (see ROADS AND STREETS). In August, 1939, there were four commercial air services covering 1114 miles of routes and flying 13,368 miles per week. The Turkish merchant marine on June 1, 1939, comprised 185 vessels of 224,461 gross tons capacity.

Government. The Constitution of Jan. 20, 1921, as amended in 1924 and 1934, vests executive and legislative power in the Grand National Assembly, consisting of 424 deputies elected for four years by universal male and female suffrage. The Assembly exercises executive power through the President, elected for four years by the Assembly, and through the Council of Ministers, chosen by the President. In practise the President wields dictatorial powers. President in 1939, Gen. Ismet Inonu, who was elected to succeed President Kemal Ataturk on Nov. 11, 1938, and re-elected Apr. 3, 1939. The People's party, the only legal political organization, in December, 1938, elected President Inonu

as President General of the party for life. For other developments in 1939, see *History*.

HISTORY

Internal Affairs. Anticipating the European crisis that led to war in September, President Inonu early in 1939 took steps to consolidate Turkey's internal political situation. A new cabinet under Dr. Refik Saydam was appointed January 25 to hold the quadrennial elections for the Grand National Assembly. The voting, moved ahead to March 26, resulted in the customary return of a National Assembly composed entirely of People's party members. On April 3 the new Assembly unanimously re-elected Ismet Inonu as President for the ensuing four-year term. The following day Premier Saydam reorganized his cabinet on a more permanent basis, replacing two of his 13 associates.

The election was notable for the cautious moves toward a more democratic political system initiated by President Inonu. The voters were given a partial choice in the designation of candidates for the National Assembly. Efforts were made to enlist the co-operation of Turkish elements ignored or suppressed by Inonu's predecessor. Moreover the Fifth Grand Congress of the People's party on May 27 agreed to the experimental establishment of an "independent" group of 21 deputies to serve as benevolent critics of the government's program during debates in the Grand National Assembly.

Economically, the country suffered a setback in 1939 as compared to 1938 due to dislocations of

trade by the European crisis, particularly the loss of the important German export market during the last quarter of the year. These disturbances and increasing expenditures for defense forced a curtailment of the industrialization program. The important Karabuk iron and steel plant started operations in midsummer but completion of some of the connected factories was delayed by a shortage of materials and the departure toward the end of the year of German technicians. This adverse economic trend was offset in part by the large credits extended by Great Britain and France (see below) and by the trade agreement with the United States signed on April 1 and ratified November 20. However the great Anatolian earthquake of December 26-27 was another severe blow to the Turkish national economy. See EARTHQUAKES under *Turkey* for full details.

Foreign Policy. The year brought a historic and far-reaching change in Turkish policy. An ally of Germany during the World War, and thereafter an uncompromising neutral having extremely close relations with the Soviet Union, Turkey in 1939 threw in her lot with Britain and France and staked her future upon their victory in the European War (q.v.). The transformation from neutral to Franco-British ally was a gradual one. It started early in the year when the German annexation of Bohemia and Moravia, followed by Italian expansion into Albania, aroused Turkish fears that the Axis powers would sweep into the Balkans and endanger Turkey's security and independence. At the same time Britain and France offered the



Courtesy of New York Times

STRATEGIC POSITION OF TURKEY AND THE STRAITS

Turks substantial inducements to join their anti-Axis bloc.

New Alliances. After Britain and France on April 13 had conditionally guaranteed the independence of Greece and Rumania, Premier Saydam on May 12 obtained the Grand National Assembly's approval of an Anglo-Turkish mutual assistance agreement. The same day it was announced that Britain and Turkey had undertaken to "co-operate effectively" and lend each other aid "in the event of an act of aggression leading to war in the Mediterranean area." Turkey and France exchanged identical pledges in the agreement signed June 23 under which France ceded to Turkey the Republic of Hatay (Sanjak of Alexandretta). See FRANCE and SYRIA AND LEBANON under *History* for details.

These agreements were designed by Turkey, Britain, and France to check threatened aggression by Germany upon Rumania and by Italy upon Greece. Turkey in May received a £10,000,000 credit from Britain for the purchase of armaments and other materials in the United Kingdom. On June 2 a Turkish military mission left for London and negotiations for converting the Anglo-French-Turkish accords into a permanent alliance were carried forward. At the same time the Turkish Government used its close contacts with Moscow to facilitate progress of the Anglo-French-Soviet mutual assistance pact negotiations aimed at Germany.

Negotiations with Moscow. The Soviet-German non-aggression pact of August 24, which brought these negotiations to an unsuccessful conclusion, placed Turkey in a difficult position. Forced to choose between the Soviet Union and the Anglo-French combination, President Inonu sent Foreign Minister Sukru Saracoglu to Moscow late in September to secure a Russian agreement to maintain the status quo in the Balkans and the Black Sea. The Soviet Government not only refused to guarantee the status quo in the Balkan-Black Sea area but sought a pledge from Turkey that Anglo-French warships would not be permitted to pass through the Straits in the event war broke out in the Black Sea area. On October 17 Premier Saydam announced the failure of the Moscow negotiations and two days later Turkey concluded a formal 15-year alliance with Britain and France.

The treaty gave the Turks unconditional Anglo-French pledges of support against aggression from any quarter. In return Turkey agreed to aid the Allies if aggression by any power provoked war in the Mediterranean or if they were compelled to carry out their pledges to protect Rumania and Greece against attack. However the treaty provided that Turkey could under no circumstances be compelled to join the Allies in a war against the Soviet Union. Following conclusion of this treaty, which entered into force November 16, Britain and France extended additional credits and loans aggregating £43,500,000 to Turkey and agreed to purchase large quantities of Turkish exports—especially dried fruits, nuts, and tobacco—previously marketed in Germany.

Although Turkish-Soviet relations remained on a fairly friendly basis during the remainder of the year, the Turks suspected Stalin of planning to resume the former Czarist drive for control of the Straits. Toward the end of the year they strongly reinforced troops stationed along the northeastern and eastern frontiers. At the same time plans were worked out for Turkish military

co-operation with British, French, and other Allied forces in the Near East.

Relations with the Reich. Although avoiding participation in the European conflict during 1939, Turkey's preparations showed full expectation of future involvement. Following conclusion of the Anglo-French-Turkish pact of October 19, the German press warned that Turkey might share the fate of Poland. In November and December German-Turkish relations became more tense. A number of Germans in Turkey were arrested for espionage and propaganda activities. Others were expelled. The Turkish press warned Franz von Papen, the German Ambassador, to end his efforts to provoke a Turkish-Soviet conflict or "get out."

Balkan Policy. In an effort to block German and Soviet penetration into the Balkans, Turkey with Yugoslav co-operation and some Italian support sought to strengthen the Balkan Entente and to create a solid bloc of neutrals comprising all the Balkan and neutral Danubian states. On November 10 Turkey and Bulgaria agreed to demobilize troops concentrated along their mutual frontier, but the Balkan bloc idea was shattered by Hungary's refusal to moderate its territorial demands upon Rumania.

See BULGARIA, FRANCE, GERMANY, GREAT BRITAIN, GREECE, ITALY, RUMANIA, SYRIA AND LEBANON, UNION OF SOVIET SOCIALIST REPUBLICS, and YUGOSLAVIA under *History*; EARTHQUAKES; EDUCATION; MILITARY PROGRESS; NAVAL PROGRESS.

TURKEYS. See POULTRY.

TURKMENIAN SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R., north of Iran and Afghanistan. Area, 171,250 square miles; population (Jan. 17, 1939), 1,253,985. Chief towns (with 1936 populations): Ashkhabad, the capital, 102,500; Krasnovodsk, 27,000. About 85 per cent of the country is occupied by the Kara-Kum desert and 90 per cent of the inhabitants live in the oases along the Amu-Darya river. During the last four years a number of irrigation systems have been constructed and the output of cotton has been doubled. The breeding of horses, camels, and sheep is being rapidly extended. Carpet weaving is an important industry. Mineral products consist of sulphur, sodium sulphate, ozokerite, petroleum, and salt. See UNION OF SOVIET SOCIALIST REPUBLICS.

TURKS AND CAICOS ISLANDS. See JAMAICA.

TUSKEGEE INSTITUTE. An institution for the vocational training of colored young men and women at Tuskegee Institute, Ala., founded in 1881 by Booker T. Washington. The enrollment for the term beginning September, 1939, was 1282. Summer sessions, 828. There were 178 members on the faculty. The endowment for the year ending May 31, 1939, was \$6,991,908, the income was \$442,053. The library contained 45,429 volumes. President, Fred D. Patterson.

TUTUILA. See SAMOA.

TVA. Tennessee Valley Authority (q.v.).

UBANGI-SHARI. See FRENCH EQUATORIAL AFRICA.

UDMURT AUTONOMOUS SOVIET SOCIALIST REPUBLIC See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

UGANDA (ō-gān'dā or ū-gān'da) **PROTECTORATE.** A protectorate under British control in East Africa. Area, 93,981 square miles; population (Jan. 1, 1939, estimate), 3,745,165 (3,725,798 natives, 17,256 Asiatics, and 2111

Europeans). Vital statistics (natives, 1938): 26.70 births per 1000, and 17.50 deaths per 1000. Chief towns: Entebbe (capital), Kampala, and Jinja.

Production and Trade. The staple crop is cotton which is grown by native cultivators (54,400 met. tons of ginned cotton produced and 127,000 met. tons of cottonseed exported during 1938-39). For 1940 the cotton crop was estimated at over 325,000 tons. Other products were coffee, tin, gold, hides and skins, and salt. Livestock (1937 census): 2,609,146 cattle, 2,541,077 goats, and 1,405,549 sheep. Uganda and Kenya form a single unit for customs purposes. In 1938, imports (ex-ship Mombasa, Kenya) were valued at £2,992,974; exports (f.o.b. Mombasa), including re-exports of £188,934, totaled £8,857,900 of which cotton (lint and seed) accounted for £3,734,887, coffee £327,664, sugar £118,847, and gold £145,413. In addition to the external trade afore-mentioned there is an interchange of imported and locally produced goods among Kenya, Tanganyika, and Uganda.

Communications. In 1938 there were 2075 miles of main roads maintained by the government, and 4800 miles of roads built and maintained by native administrations. Kampala is linked with most of the chief towns by motor-omnibus service. Railway lines total 328 miles. Port Bell, Uganda, is a port of call on the England to South Africa air service. See KENYA under *Communications*.

Government. For 1938, revenue totaled £1,863,863 and expenditure £2,060,199. The government is administered by a governor who is assisted by an executive council (7 ex-officio members) and a legislative council of 10 members (6 ex-officio and 4 unofficial). Native kings and chiefs, including some with rights regulated by treaty, are encouraged in carrying out the government of their own subjects, and purely native matters are dealt with by native councils. Annual estimates are compiled for all native administrations and submitted to the governor for approval (in 1938, revenue £524,933 and expenditure £525,871). Governor and Commander-in-Chief, Sir P. E. Mitchell (appointed October, 1935).

UKRAINIAN SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R., occupying the southwest part of the Soviet Union. It includes the Moldavian Autonomous Soviet Socialist Republic (3250 sq. mi.; capital, Tiraspol). Area, 171,950 square miles; population (1939 census), 30,960,221. Chief cities (1939 populations): Kiev (capital), 846,293; 663,000 in 1936; Kharkov, 833,432; Odessa, 604,223; Dnepropetrovsk, 500,662; Stalino, 462,395. Education (1937): 4,319,000 students in Ukrainian elementary schools, and 253,000 students in schools for higher education (1936-37).

Production, etc. The area under crop in 1937 was 62,022,100 acres—the chief products being wheat, barley, rye, buckwheat, hay, sugar beets, potatoes, and cotton. Ninety-six per cent of all peasant farms have been collectivized, and 90,000 tractors and 29,000 harvester combines are used. Livestock raising is an important occupation. Minerals produced include coal (67,100,000 tons during 1937), manganese, salt, iron, limestone, mercury, petroleum, and cement. Industrial output (in tons) in 1936 was pig iron 8,862,000, steel 7,995,000, rolled metal 5,843,000. Electric power (1936): 8600 million kilowatt hours. Railways, in 1936, extended 8880 miles including 125 miles

which were electrified. See POLAND under *History*; UNION OF SOVIET SOCIALIST REPUBLICS.

ULSTER. See IRELAND, NORTHERN.

UN-AMERICAN ACTIVITIES, INVESTIGATION OF. See DIES COMMITTEE.

UNEMPLOYMENT. See UNITED STATES EMPLOYMENT SERVICE; LABOR CONDITIONS; LABOR LEGISLATION; for unemployment insurance, see SOCIAL SECURITY BOARD.

UNFEDERATED MALAY STATES. The States of Johore, Kedah, Kelantan, Perlis, and Trengganu in the Malay Peninsula, under British protection and control (see below). The rulers of these five States are assisted by State councils, and by advisers appointed by the British government. The chief products are rubber, manganese, coconuts, pineapples, coffee, tapioca, areca nuts, rice, timber, tin, betel nuts, iron, and gold. The Straits dollar (S\$) averaged \$0.5692 for 1938, \$0.5174 for 1939.

Johore. Area, 7500 square miles; population (1938 estimate), 709,870 (308,240 Malays, 311,620 Chinese, 84,090 Indians, 1080 Europeans, and 4840 others). Capital, Johore Bahru (97,634 inhabitants). In 1938, imports were valued at S\$43,380,224; exports, S\$62,758,852; revenue, S\$17,922,090; expenditure, S\$18,863,093. Estimates (1939): revenue, S\$19,624,000; expenditure, S\$25,822,000. Sultan, Sir Ibrahim (acceded, 1895).

Kedah, kādā. Area, 3660 square miles; population (1937 estimate), 474,755. Capital, Alor Star (25,000 inhabitants). In 1937-38, imports were valued at S\$12,385,148; exports, S\$44,625,429; revenue, S\$7,544,682; expenditure, S\$6,625,653. Sultan, Sir Hamid Hamlin Shah (acceded, 1881).

Kelantan, kē-lān'tan. Area, 5750 square miles; population (1937 estimate), 400,378. Capital, Kota Bharu. In 1938, imports were valued at S\$7,734,361; exports, S\$7,063,345; revenue, S\$3,134,035; expenditure, S\$3,001,033; public debt, S\$5,119,069. Sultan, Sir Ismail.

Perlis. Area, 316 square miles; population (1938 estimate), 55,446. Capital, Kangar. In 1938-39, revenue totaled S\$747,756; expenditure, S\$700,190. Ruler, Tuan Syed Alwi.

Trengganu, trēng-gā'nō. Area, 5050 square miles; population (1938 estimate), 201,370. Capital, Kuala Trengganu. In 1938, imports were valued at S\$6,140,777; exports, S\$9,851,964; revenue, S\$2,427,004; expenditure, S\$2,360,447; public debt, S\$2,860,000. Sultan, Sir Suleiman Badrullah Shah (acceded in 1920).

UNION COLLEGE. A nonsectarian college for men at Schenectady, N. Y., founded in 1795. The enrollment for the autumn of 1939 totaled 826. The faculty numbered 83. The amount of endowment for the year was \$4,425,364, and the income \$577,847. The library contained 106,515 volumes. President, Dixon Ryan Fox, Ph.D.

UNION ISLANDS (TOKELAU). The five clusters of islets (the chief being Fakaofu, Nukunono, and Atafu) in the Pacific (8° to 10° S. and 171° to 173° W.), formerly part of the British Gilbert and Ellice Islands colony but transferred to the jurisdiction of New Zealand on Feb. 11, 1926, and placed under the administrator for Western Samoa. Area, 4 square miles; population (1937), 1176.

UNION OF SOUTH AFRICA. See SOUTH AFRICA, UNION OF.

UNION OF SOVIET SOCIALIST REPUBLICS (U.S.S.R.). A state comprising the

greater part of the former Russian Empire. Capital, Moscow.

Area and Population. The area as of Aug. 31, 1939, was about 8,200,000 square miles (73 per cent in Asia and 27 per cent in Europe). The census of Jan. 17, 1939, showed a population of 170,467,186 (88,802,205 females and 81,664,981 males), compared with 147,027,915 at the 1926 census. The urban population at the 1939 census was 55,909,908; rural, 124,557,278. In addition, there was added to the U.S.S.R. through the annexation of eastern Poland in September, 1939, about 75,650 square miles of territory and some 12,800,000 inhabitants, according to Soviet estimates, divided as follows: Western Ukraine, 41,650 square miles and 8,000,000 inhabitants; Western White (Byelo) Russia, 34,000 square miles and 4,800,000 inhabitants.

At the beginning of the European War, the Soviet Union was composed of 11 Union Republics which in turn included 22 autonomous republics and 9 autonomous provinces as well as lesser subdivisions. The various autonomous units represented the principal national groups in the Union, of which there were nearly 200, inherited from the Czarist Empire. The estimated area and population of the 11 Union Republics as of Jan. 17, 1939, are shown in the accompanying table.

U.S.S.R.: AREA AND POPULATION

	<i>Square Kilometers</i>	<i>Population</i>
Russian S.F.S.R.	16,510,500	109,276,614
White Russian (Byelo) S.S.R.	126,800	5,567,976
Ukrainian S.S.R.	445,300	30,960,221
Uzbek S.S.R.	378,300	6,282,446
Azerbaijan S.S.R.	86,000	3,209,727
Armenian S.S.R.	30,000	1,281,599
Georgian S.S.R.	69,600	3,542,289
Turkmenian S.S.R.	443,600	1,253,985
Tadjik S.S.R.	143,900	1,485,091
Kazakh S.S.R.	2,744,500	6,145,937
Kirghiz S.S.R.	196,700	1,459,301

The populations of the 29 leading cities at the 1926 and 1939 censuses, with the percentage increases for that period, were as follows:

POPULATIONS OF CITIES 1926 AND 1939

<i>City</i>	<i>Dec. 17, 1926</i>	<i>Jan. 17, 1939</i>	<i>1939 in % of 1926</i>
Moscow	2,029,425	4,137,018	203.9
Leningrad	1,690,065	3,191,304	188.8
Kiev	513,637	846,293	164.8
Kharkov	417,342	833,432	199.7
Baku	453,333	809,347	178.5
Gorky	222,356	644,116	289.7
Odessa	420,862	604,223	143.6
Tashkent	323,613	585,005	180.8
Tbilisi	294,044	519,175	176.6
Rostov-on-Don	308,103	510,253	165.6
Dnepropetrovsk	236,717	500,662	211.5
Stalino	174,230	462,395	265.4
Stalingrad	151,490	445,476	294.1
Sverdlovsk	140,300	425,544	303.3
Novosibirsk	120,128	405,589	337.6
Kazan	179,023	401,665	224.4
Kuibyshev	175,636	390,267	222.2
Saratov	219,547	375,860	171.2
Voronezh	121,612	326,836	268.7
Yaroslavl	114,277	298,065	260.8
Ivanovo	111,460	285,069	255.8
Archange	76,774	281,091	366.1
Omsk	161,684	280,716	173.6
Chelyabinsk	59,307	273,127	460.5
Tula	155,005	272,403	175.7
Minsk	131,803	238,772	181.2
Vladivostok	107,980	206,432	191.2
Stalinsk	3,894	169,538	4,353.8
Kirov	62,097	143,181	230.6

National Defense. See MILITARY PROGRESS; NAVAL PROGRESS.

Education. During the two decades ending in 1937, illiteracy was reported to have declined from 67.7 per cent to less than 8 per cent. At the beginning of the 1938-39 school year there were 33,965,400 pupils attending 171,579 schools. There were about 1,200,000 students in technical schools and workers' faculties; about 1,800,000 children in nurseries and kindergartens, exclusive of 5,700,000 children placed in collective farm nurseries and kindergartens during harvest season; and 550,000 students in universities and colleges. In the spring of 1938, 106,700 students were graduated from schools of higher education and 160,000 new students enrolled in universities. There were 563,000 teachers appointed to elementary and secondary school positions in the R.S.F.S.R. alone in 1938. Education is a charge against each of the 11 Union Republics and against the localities concerned. Expenditures increased from 764,700,000 rubles in 1929 to 18,774,000,000 rubles in 1938.

Production, etc. In the Soviet Union transport and communications are conducted as Federal departments. Banking is centralized in a State Bank under government control. Distribution is socialized, with retail trade in the cities conducted mainly by local administrative bodies and in the villages by consumer co-operatives. Industrial production is carried on largely by state enterprises, operating under the general direction of appropriate Commissariats (government departments). A State Planning Commission (Gosplan) plots the objectives for each year and for five-year periods. An Economic Council acts as a co-ordinative body. A commission of Soviet Control checks and supervises results.

State planning is an essential of Soviet economy. The planning system is designed to direct and co-ordinate the employment of the energies and resources of the country for orderly development. The planning system, however, goes beyond the economic field. It includes science, education, public health, and the extensive social services designed to safeguard the welfare and security of the citizenship.

Under this system the work of Gosplan has assumed a position of primary importance. Its personnel in Moscow includes a considerable number of permanent specialists re-enforced by consultants who are authorities in every field. Under the central body each Constituent Republic has its Gosplan, and there are subordinate planning boards in the various cities.

The third Five-Year Plan (see 1938 YEAR BOOK for programs of first and second Five-Year Plans) was begun Jan. 1, 1938. Schedules for the first year envisaged an increase in the industrial output of 15.5 per cent and commensurate increases in other lines.

Industry. The increase in general industrial production in 1938 was 13.5 per cent over 1937. The output of the chief industries in 1938 was: Electric power, 132,600,000,000 kw.-hr.; Coal, 132,900,000 metric tons; peat, 26,450,700 metric tons; oil, 32,230,000 metric tons; pig iron, 14,600,000 metric tons; steel, 17,700,000 metric tons; cement, 5,696,000 metric tons; trucks, 184,000 units; tractors, 32,200 units; cotton cloth, 3,491,000,000 meters; woolen goods, 114,000,000 meters; footwear, 213,000,000 pairs; sugar, 2,500,000 metric tons. Average daily carloadings were 88,000 cars. For comparative figures for 1935, 1936, and 1937, see 1938 YEAR BOOK, p. 737.

Agriculture. Since 1928 the structure of agriculture has been completely reorganized. The small,

individual peasant holdings, averaging 12 to 14 acres, have in large measure given way to large-scale collective farms in which the peasants pool their acreage. (Each collective farm family, however, has its own garden plot and domestic farm animals.) This new set-up has made possible better organized methods of production with a high degree of mechanization. The transition was effected largely during the years 1929-33. In 1929 less than 4 per cent of the peasant households were represented in the collective farms; by Jan. 1, 1938, the percentage had risen to 93.5. There were 244,000 collective farms averaging about 1200 acres in 1938. Some 800,000 peasant households still worked individual holdings. In addition, large state farms operated about 12 per cent of the sown area.

SOWN AREA AND GRAIN HARVEST

	Area of all crops (hectares ^a)	Area of grain crops (hectares ^a)	Grain production (metric tons)
1913	105,000,000	94,400,000	80,100,000
1931	136,300,000	104,400,000	69,480,000
1936	133,800,000	102,400,000	82,700,000
1937	135,300,000	104,400,000	120,290,000
1938	139,900,000	102,400,000	94,900,000

^a Hectare equals 2.47 acres.

Grain exports, in metric tons, averaged 10,553,000 annually for the years 1909-13 and were 5,057,000 in 1931, 332,000 in 1936, 1,278,000 in 1937, and 2,080,000 in 1938.

PRINCIPAL INDUSTRIAL CROPS

	1936	1937	1938
Cotton.....met. tons	2,390,000	2,580,000	2,690,000
Sugar beets.....do...	16,830,000	21,860,000	16,680,000
Flax.....do...	580,000	570,000	546,000

The backbone of mechanization in Soviet agriculture is furnished by the machine and tractor stations, each of which serves collective farms within its area. These stations grew from 158 in 1930 to 6350 in 1938. The number of tractors on farms increased from 66,332 in 1929 to 483,500 in 1938; the number of combines, from 45 in 1929 to 153,500 in 1938.

Transportation. Length of railway lines in 1937 was 53,700 miles, nearly 50 per cent greater than in 1913. Railway freight carried in 1938 aggregated 369,000,000,000 ton-kilometers; passengers, 1,178,000,000 persons. The length of Soviet air lines in 1937 was 79,250 miles; in that year they carried 235,000 passengers and 46,900 metric tons of mail and freight. See ROADS AND STREETS for highways. The length of inland waterways is about 248,000 miles, of which 65,826 miles are navigable. In 1938 they carried 66,600,000 metric tons of freight (66,900,000 in 1937).

Shipping. The Soviet merchant marine had a gross tonnage of 1,280,900 on June 30, 1938 (1,258,200 on June 30, 1937). The total freight carried (including coastwise freight) amounted to 35,500,000 metric tons in 1937. See SHIPPING.

Foreign Trade. Foreign commerce in the Soviet Union is a governmental monopoly exercised by the Commissariat of Foreign Trade which maintains trading agencies abroad. Imports and exports are regulated in accordance with the country's system of planned economy. Trade in recent years is shown in the accompanying table compiled from the U.S. *Foreign Commerce Yearbook 1938*.

For distribution by countries and chief items of trade in 1937, see 1938 YEAR BOOK, p. 739.

Finance. In a country as highly socialized as the Soviet Union the growth of the budget reflects

SOVIET FOREIGN TRADE

Year	Imports (1,000 rubles ^a)	Exports (1,000 rubles ^a)	Imports (\$1,000 ^b)	Exports (\$1,000 ^b)
1935	1,057,200	1,609,300	209,264	318,534
1936	1,352,535	1,359,104	270,507	271,821
1937	1,341,255	1,728,634	268,251	345,727
1938	1,422,882	1,331,927	261,757 ^a	250,751

^a In rubles nominally equal to 20 U.S. cents. ^b U.S. currency dollars. ^c Provisional.

to a large extent the degree of economic progress. The first "firm" budget, that of 1924-25, balanced at 32,700,000 rubles. For the calendar year 1938 budget estimates placed receipts at 127,600,000,000 rubles and expenditures at 124,000,000,000 (national economy, 51,709,000,000; defense, 23,151,000,000; social welfare, 35,316,000,000). The State Bank, only bank of issue and center of the financial system, had 16,000,000 depositors with deposits of 4,500,000,000 rubles on Dec. 1, 1937.

Government. Under the Constitution of 1936 supreme political power is vested in the Supreme Soviet of the U.S.S.R., meeting twice a year, and elected for a period of four years by universal direct suffrage and with secret ballot. The Supreme Soviet consists of two legislative chambers with equal rights. The two chambers in joint session elect a Presidium of the Supreme Soviet consisting of 37 members, i.e., president, 11 vice-presidents, 24 members, and a secretary, with wide administrative powers between sessions of the Supreme Soviet, including ratification of treaties and declaration of a state of war. The Presidium supervises the work of the Council of the People's Commissars, selected by the Supreme Soviet, which acts as the executive and administrative organ of the state.

In practise, the government and country is under the absolute control of Joseph Stalin, general secretary of the Communist party of the U.S.S.R., whose only governmental post is that of member of the Presidium of the Supreme Soviet. The Communist party is the only legal political party, and all candidates for elective office must have its approval. The Council of People's Commissars (All-Union) was composed as follows at the end of 1939: Chairman and Commissar for Foreign Affairs, Viacheslav M. Molotov; Defense, Klementi E. Voroshilov; Foreign Trade, Anastase I. Mikoyan; Railways, Lazar M. Kaganovich; Communications, Ivan T. Peresipkin; Sea Transport, Semen S. Dukelsky; River Transport, Zosim A. Shashkov; Electric Power Stations and Electric Industry, Mikhail G. Pervukhin; Ferrous Metallurgy, Fedor A. Merkulov; Non-Ferrous Metallurgy, Alexander I. Samokhvalov; Chemical Industry, Mikhail F. Denisov; Aviation, Mr. Shakhurin; Shipbuilding, Ivan T. Tevosyan; Munitions, Ivan P. Sergeyev; Armaments, Boris L. Vannikov; Heavy Machine Building, Viacheslav A. Malishev; Medium Machine Building, Ivan A. Likhachev; General Machine Building, Peter I. Parshin; Navy, Nikolai G. Kuznetsov; Procurement, Sergei E. Skrinnikov; Construction, Semen Z. Ginzburg; Oil Industry, Lazar M. Kaganovich; Coal Industry, Vasily V. Vakhurshev.

The Union-Republican People's Commissars were: Food, Vasili P. Zotov; Fish, Acting Commissar J. Bogaev; Meat and Dairy Products, Pavel V. Smirnov; Light Industry, Sergei G. Lukin; Textiles, Alexei N. Kosigin; Timber, Naum M. Antselovich; Agriculture, Ivan A. Benediktov; State Grain and Livestock Farms, Pavel P. Lovanov; Finance, Arseni G. Zverev; Trade, Alexander

B. Lubimov; Internal Affairs, Lavrenti P. Beria; Justice, Nikolai M. Richkov; Public Health, Georgi A. Miterev; Building Materials, Leonid A. Sosnin. Chairman of the Presidium of the Supreme Soviet, Mikhail Kalinin; Chairman of the State Planning Commission, Nikolai A. Voznesensky; Chairman of the State Bank Administration, Nikolai A. Bulgadin; Chairman of the Commission of Soviet Control, Rosalia S. Zemlyachka; Chairman of the Supreme Court, Ivan T. Golyakov; Procuror, Mikhail I. Pankratiev.

HISTORY

Foreign Relations. The Soviet Union rejected in 1939 the proposals of Great Britain and France for common action to halt the progress of Germany in eastern Europe; it threw bygones to the winds and made with Hitler's Reich agreements assuring Germany of Russian consent to the German conquest of Poland and Danzig, in return for a substantial share of the Polish territorial spoils and a free hand over the little States of the eastern Baltic. These abrupt and total changes in the Union's alignment as to foreign relations admitted Russia into a course of westward expansion that restored its domination over most of the Baltic area that it had lost in the war of 1914-18.

The Bargain with Germany. The chief of the three agreements constituting the Russo-German partnership of 1939 was a treaty of non-aggression signed at Moscow on August 24 (dated August 23). Each party therein bound itself for ten years to refrain from using force against the other; to give no support to any warlike acts of a third power against the other party; and to settle any conflict of interest by direct discussion or arbitration. The ratification of this treaty a week later closely preceded Germany's invasion of Poland. Issuing the treaty's text on the 24th, the signers tried, but failed, to avert the British and French declarations of war against Germany on Poland's behalf.

A second part of the bargain with Germany, a commercial agreement signed on August 19, arranged for German purchases of raw materials up to the value of 180,000,000 marks and Russian purchases of machinery to a total of 200,000,000 marks in the course of two years, and for a German credit of 180,000,000 marks to Russia. A third agreement, dated September 28, followed the actual partition of Poland by the two powers; it ratified the division of territory, permitting Russia, among other gains, to hold the Galician petroleum deposits.

Russia's accord with its powerful and formidable ex-adversary was a marriage of opposites, a marriage of convenience, and so far as concerned Great Britain and France, an elopement. The latter two had, virtually up to August 23, carried on a slow but hopeful negotiation at Moscow, for Russian aid in the defense of Poland against Germany. It took the news of Russia's new bond to terminate this hope. Yet signs had occurred earlier in the year, to indicate what was to come.

Rejection of Britain and France. Joseph Stalin, speaking to the eighteenth congress of the Communist Party on March 10, denounced the British and French governments and that of the United States for having yielded Czechoslovakia to the aggressor and for seeking to bring about war between the Fascist powers and the U.S.S.R. The British Government, nevertheless, approached Russia in April with proposals looking to an agreement under which Russia would join the British

and French in aid to Poland or to Rumania if either of these were attacked. The proposals did not provide for British and French aid to Russia in case of an attack on the latter. The replacement of Litvinov as Commissar of Foreign Affairs by V. M. Molotov, May 3, gave indication that the government at Moscow no longer felt satisfied with Litvinov's long-maintained policy of seeking closer relations with the powers of western Europe. Still the Franco-British effort to enlist Russia for the protection of the latter's small neighbors from Germany was allowed, or encouraged to drag on, serving as a stimulant to a freshly started German bid for Russian favor. Nor did Russia find it necessary to break off with Great Britain and France until attractive proposals from Germany had actually been drafted into treaties and signed.

Russia's Position Toward Japan. Forces of the Soviet Union and of the Japanese and Manchoukuoan armies engaged from May until mid-August in hostilities along the Khalka River, near the border of Outer Mongolia. The campaign, of which few particulars were reported, ended in a reverse to the Japanese; these gave up their attempt to cross this river and advance westward and made a truce (see MANCHOUKUO under *History*). This outcome freed Moscow from military worries in the Far East at the moment when the opportunity to acquire territory in Eastern Europe arrived. See also JAPAN and CHINA under *History*.

Acquisitions in Poland. The successful timing of developments already noted put Moscow in a position to claim a share of Poland after the German forces had crushed all effective Polish resistance (see EUROPEAN WAR, under *The War in Poland*). Russian troops passed the border on



Courtesy of New York Times

EXPANSION OF U.S.S.R., 1939

The Soviet Union annexed Eastern Poland in September; established domination over Estonia, Latvia and Lithuania in September-October; and launched an attack upon Finland on November 30. Pressure was brought upon Rumania for the cession of Bessarabia (shown by broken black line). Moscow restored to Lithuania part of the Vilna territory (bounded by broken white line in Eastern Lithuania) which the U.S.S.R. had acquired in the partition of Poland.

September 17 and moved rapidly west to a pacific junction with the Germans. Vilna was occupied, but it was soon restored to Lithuania, from which Poland had taken it (see LITHUANIA). Polish landlords found on their estates were reportedly put under arrest, and their properties were divided among peasants. The use of the White Russian and Ukrainian dialects was established in schools. Railroads were widened to the standard Russian gauge. The sovietization of the conquered districts proceeded apace (see POLAND under *History*). Polish territory annexed by the Union was added to the Soviet republics of the Ukraine and of White Russia. The acquired population added about 9 per cent to the number of those under Soviet rule (see above, under *Area and Population*). The map on p. 773 shows the westward expansion of Russian power during 1939 in Poland and elsewhere.

Domination of Eastern Baltic Lands. No sooner had Russian troops occupied the allotted part of Poland and the agreement of September 28 put down the partition with Germany in black and white than Moscow summoned Estonia, Latvia, and Lithuania, each in turn, to conferences. The representatives of these governments made little difficulty over signing treaties of mutual assistance that were presented to them. The Estonian treaty was signed September 28; the Latvian, October 5; the Lithuanian, October 10. Each of the little republics undertook to admit Russian forces to posts within its territory, to accept Russian protection, and to help defend Russia from attack through such territory (see ESTONIA; LATVIA; LITHUANIA). The three, while retaining their own governments and a guaranteed control of their internal affairs, became, in the main essential, protectorates of the Union. The position that Russia had held on the southern shore of the Baltic until 1914 became to this extent re-established.

Finland, approached about the same time as the foregoing three, was invited to Moscow on October 7. The demands made on Finland (q.v.) differed greatly from the proposals to the other Baltic states, for they did not involve the admittance of Russian garrisons in Finnish territory as such, while they did on the other hand call for the lease of the port of Hangö to the Union for a naval base and for demilitarization of the frontier and cession of a certain amount of territory. Unlike the other republics, Finland refused to yield. After a period of diplomatic pressure had failed to effect Moscow's designs, military operations against Finland started on November 30. For the course of these operations, adverse to Russia in 1939, see EUROPEAN WAR, under *The Russian Front*.

Disowned by League of Nations. One prompt result of Russia's attack on Finland was the exclusion of the U.S.S.R. from the League of Nations, December 14. The action of the League did not amount to formal expulsion; the League's Council simply declared that the Union, by its own course toward Finland, had put itself out of the League. See LEAGUE OF NATIONS.

Balkan Policy. The Union's supposed design to recover Bessarabia, to increase its influence in the Balkan countries by organizing a block of states friendly to Russia, and particularly, to influence the course of Bulgaria did not progress in the same rapid manner as the policy of expansion in the area between the Balkans and the Baltic. Agreements with Germany as to Poland, though tacitly allowed to include Russian extension of control over Baltic states, gave no clue of

being intended to permit the realization of any such designs of the Union in the Balkans. Prior to Germany's invasion of Poland, Hungary's adherence to the anti-Comintern agreement led Moscow, February 2, to sever relations with Hungary, the Danubian state most closely connected with Germany; after the Russo-German understanding, these relations were resumed. Toward Rumania, the Russian attitude shifted more than once. Reported concentration of Soviet troops along the Rumanian border early in December came to nothing when the operations against Finland became so difficult as to try the resources of the Union. An article in the *Communist International*, attacking Rumania for mistreating racial minorities and demanding a treaty of mutual assistance with that country, was disavowed, December 8, soon after its appearance, by the Soviet radio. In Bulgaria the Russian policy had to deal, after the partition of Poland, with a rising dread of sovietization, among some social elements. Soviet relations with Turkey, long friendly, became severely strained.

See BULGARIA, GREECE, HUNGARY, RUMANIA, TURKEY, and YUGOSLAVIA under *History*.

Relations with United States. A commercial agreement with the United States, made in 1937, was extended for another year on August 4, under terms providing for the Union's purchasing \$40,000,000 of American goods during that time. The action of a German prize crew in taking the captured American freighter *City of Flint* into the Russian Arctic port of Murmansk, led to a diplomatic discussion with Washington late in October (see NEUTRALITY).

Internal Affairs. The eighteenth congress of the Russian Communist Party met in the Kremlin on March 10. Five years had passed since the last previous meeting, in 1934. Joseph Stalin, in his report to the congress, dwelt on the benefits that the purges and liquidations of high place-holders had effected on the membership and spirit of the party. A new central committee was elected. So far as the news of the year showed, the epidemic of wholesale demotions and executions within the ranks of the party was definitely over. One of its features, comparatively little noted among the more conspicuous individual prosecutions, had been the expulsion of a great number of ordinary and undistinguished members from the party. According to information current in 1939 the majority of those expelled, in a number of jurisdictions, were restored to membership by the middle of the year. The purge, in any event, was judged sweeping enough to have produced a change in the composition of the party, especially by thinning the ranks of the so-called "old Bolsheviks" and the partly identical hierarchy of veteran holders of high offices. The party's center of gravity shifted to a somewhat lower age-level, and the number of technically trained holders of important posts increased.

As the nature of the social-economic system of the Union inextricably united government and business, the success of Communist government had as its necessary condition the success of the collective provision of goods, of services, and of the ability of the individual to obtain them. For this reason the continual recurrence of shortages in goods demanded by the public was a matter of definite concern to those in power. Shortages were noted from time to time in the earlier part of the year; in November and also in December—when the military operations against Finland had be-

come extensive enough to put production and transportation under some strain—shortages of a wide variety of goods were reported. As in earlier instances, people connected with the merchandising system were suspected of buying up the goods as these reached the shops, in order to sell at higher prices to customers who could not get them there.

The question of the doctrinal propriety of keeping up a strong central government in a Communist system was discussed during the year, at least from the Stalinist side. A letter written by Joseph Stalin in February to V. L. Ivanoff represented the need for a powerful authority, well backed by troops and police, so long as the Soviet system had to face governments run according to the capitalistic system. This view was amplified in a pamphlet of instructions issued to propagandists in November.

The budget for 1939 provided for the expenditure of 155,067 millions of rubles, as against 127,006 millions for 1938. The estimated expenditure for defense, in particular, was 40,885 millions, as against 27,000 millions for 1938. Rubles at the time were worth about five to the U.S. dollar, according to the Russian official rate, and possible 20 to the dollar if measured by the general purchasing power of the ruble in Russia. The age of liability to military service was reduced to 17 years, for most men, from 19 years; the period of service was lengthened to three years, from two; the usual reasons for exemption were restricted.

Popular elections, held throughout the Union on December 24, were featureless, as the only candidates nominated were those of the Stalinist bloc. Voters to the number of about 93,500,000 came to the polls and about 97 per cent of them voted for the candidates, the rest spoiling their ballots or striking out the names; of the 1,281,008 persons elected, mainly to local and provincial offices, nearly one-third were women; 31 per cent of the whole were members of the Communist Party, and the rest were non-party supporters of Stalin.

See also AFGHANISTAN, DENMARK, FRANCE, GERMANY, GREAT BRITAIN, IRAN, ITALY, MEXICO, NORWAY, and SWEDEN under *History*; ARMAMENTS, COST OF; CHEMISTRY, INDUSTRIAL; COMMUNISM; MILITARY PROGRESS; NAVAL PROGRESS.

UNIONS. See AMERICAN FEDERATION OF LABOR; CONGRESS OF INDUSTRIAL ORGANIZATIONS; LABOR CONDITIONS.

UNITARIAN CHURCH. A denomination of independent congregational churches voluntarily united for more efficient religious work. Headquarters, 25 Beacon St., Boston, Mass. See RELIGIOUS ORGANIZATIONS.

UNITED BRETHREN CHURCH. A church formed from the evangelistic movement of Phillip William Otterbein and Martin Boehm in Maryland in 1800. Headquarters, United Brethren Building, Dayton, Ohio. See RELIGIOUS ORGANIZATIONS.

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND. See GREAT BRITAIN; IRELAND, NORTHERN.

UNITED STATES. The area of the United States proper, or the 48 States and the District of Columbia, totaled (1939) 3,026,789 square miles; this excluded open sea and parts of the Great Lakes within territorial limits; but it included 53,013 square miles of other water. The non-contiguous lands under the United States' au-

thority (Alaska, Hawaii, the Philippine Islands, the Panama Canal Zone, Puerto Rico, Guam, the Virgin Islands, and American Samoa) comprised 711,606 square miles. The combined area of the Union and these lands was 3,738,395 square miles.

The population of the 48 States and the District of Columbia, at the census of Apr. 1, 1930, was 122,775,046. An official estimate for July 1, 1938, made by the Bureau of the Census, placed the total population at 130,215,000. No estimates of the population State by State were made for 1938. The population of the non-contiguous lands (as listed above) totaled 14,233,389, as determined in 1929 for the Philippines and in 1930 for the other lands; the Philippines contributed all but 2,061,570 of this total.

The estimated increase in the population of the Union from Apr. 1, 1930, to July 1, 1938, totaled about 7,440,000; this came to slightly more than 6 per cent of the population of 1930, whereas the population had increased from 1920 to 1930 by 15 per cent. The percentage of yearly increase averaged, for 1930-38 (as estimated), about half of that for 1920-30. Interrupted immigration and a slow rise in the ratio of deaths to births were represented as the causes of the slackening pace of the population's increase. (For States' respective areas and populations, see under each State.)

Agriculture. See AGRICULTURE; AGRICULTURE, U.S. DEPARTMENT OF; sections on *Agriculture* under the various States; and articles on CORN, WHEAT, etc.

Commerce. See IMPORTS AND EXPORTS.

Mineral Production. The more important minerals mined in the United States are treated in separate articles. There are also paragraphs on mineral production in the articles on the individual States.

Railways. See separate article on RAILROADS.

Shipping. See articles on SHIPPING and SHIP-BUILDING.

Finance. See article on PUBLIC FINANCE.

Army and Navy. See articles MILITARY PROGRESS and NAVAL PROGRESS.

Education. See the article EDUCATION. Separate articles on the most important universities and colleges also are given under their respective titles. Sections on education are included in the articles on the several States.

See also articles on CONGRESS; DEMOCRACY; COMMUNISM; FASCISM; LABOR CONDITIONS; NEUTRALITY; PAN AMERICANISM; PRISONS, PAROLE AND CRIME CONTROL; RELIEF; REPARATIONS AND WAR DEBTS, ETC.

ADMINISTRATION

General Conditions. The year 1939 was marked by a group of features—economic, social, and political—that made an ebb in earlier trends. In public business, there arose both in National sentiment and in the public temper as to States' affairs, a widespread impulse toward economy; political partisan balance swung back, as a result of the elections of 1938, nearer to the old American norm of two fairly matched sides. The National leadership that President Roosevelt had exercised until 1937 almost without systematic opposition became less evident and political organization, the alternative to highly developed personal leadership, came to the fore. In matters of policy foreign affairs and greater military and naval armament took the center of the scene and drew attention away from many of the materialized conceptions of the New Deal. With

regard to the distribution of livings among particular classes of the needy, the Social Security Act was liberalized in a number of respects, but Congress cut down the allowance for the WPA, while attempts to adopt high pensions for the elderly failed in California and in Ohio. In the social field the freedom exercised by organized labor in dealings with employers after the enactment of the Wagner Act was curtailed by new laws in some states where it had gone to its greatest lengths, and the great gains made by labor in conflict with the employer in prior years were not broadly increased. In the economic field, production of goods and services on the capitalistic basis increased as a whole up to midsummer in the face of the tendency toward retrenchment in the public expenditure for the stimulation of prosperity, and on the basis mainly of domestic needs; later in the year the outbreak of a major war in Europe further increased activity in many lines. Comparatively little of the country's idle capital moved from banks into new investment, yet the makers of the more permanent kinds of goods improved their business sufficiently to indicate anticipation that business might return to an era of greater opportunity.

A substantial rise in the number of persons employed throughout the Nation and an increase in their aggregate pay diminished the ranks of the great group that for a decade had been the most obvious concern of public authority, those dependent on public support because of lack of demand for their services. This change removed millions from their former dependency on the Federal Administration and the State and local governments, but it did not by any means wholly do away with industrial unemployment. The farming class, in part dependent on Federal subsidies and special protective legislation, did fairly well in 1939, as in 1938. The major crops of 1939 approximated in most cases the totals of 1938, as to quantity, and as to crops' value at the place of production; but here too, there appeared no prospect of the dependents' very soon becoming able, as a class, to do without Federal dispensations. With regard to organized labor, the majority of employers and the two opposed labor groups—C.I.O. and A. F. of L.—disagreeing thoroughly on particulars, were disposed to agree that the Wagner Labor Act needed revision of some sort; but nowhere did an individual of influence propose that the country entirely give up the Federal regulation of the relations of employer and employee.

Thus for the time being at least, the stress between New Deal and reaction traversed as yet only a limited area of the structure that the New Deal had reared. As 1940, the next campaign year, approached, the political opposition and its popular following reflected fatigue with the President's leadership, skepticism as to the further fertility of the New Deal and as to the worth of some of its actual fruits, and some renewal of the former taste for individual independence from Federal supports and restraints; yet by common consent some of the chief institutions of the New Deal still stood unassailed. The most dangerous reproach made to the Administration was that its acceptable reforms had cost the Nation too high, in a National debt augmented by 20 billion dollars in seven years, a reduced yearly National income coupled with heavy taxation, firmly established unemployment, and fear of new attacks against capital, private incentive, and self-won "privilege."

The President. A number of the public statements of President Roosevelt in 1939 may be mentioned as bearing on his course as head of the Government. The earliest, his message to Congress, was delivered January 4; it presented a dark view of the situation abroad, where "a war which threatened to envelop the world in flames" had "been averted" but where peace was precarious; it upheld religion, democracy, and international good faith as "three institutions indispensable to Americans" and warned against the consequences in case that "the new philosophies of force" should make their way into the Nation; recommended provision for "adequate defense" to ward off sudden attack against the country's vital points, location of facilities for immediate organization of defense on a war-time scale, and the maintenance of an adequate morale in the citizenship; recited, with reference to internal affairs, features of the Administration's record; spoke for legislation to amend the Neutrality Act and the Labor Act; mentioned the need "to get labor and capital at work" to raise the National income to "at least \$80,000,000,000 a year"; and advocated "maintaining Government activities" in order to help carry the country's income to that figure, as "investment for prosperity." The yearly budget message (January 5) called for expenditure of about \$8,995,000,000 in the fiscal year 1940, inclusive of \$1,126,000,000 for National defense, \$2,019,000,000 for relief of the unemployed, and \$1,044,000,000 for public works; and allowed a deficit (by reason of revenues lower than the proposed expenditures) of \$3,326,000,000. A special message of March 20 asked Congress to remove the statutory limit of 30 billions on the total of outstanding U.S. bonds, but held unnecessary, for the time being, any expansion of the limit of 45 billions on the whole U.S. debt. Messages in April and May presented reorganization plans (see under *Organization and Personnel*, below). A special message of July 14 asked that Congress remove the embargo, on materials of war for belligerents, from the Neutrality Act. A message of August 2 communicated to Congress the President's understanding of the limits to the restrictions imposed by the Hatch Political Activity Act (see *POLITICAL ACTIVITY*), which he had signed. A message of September 21 conveyed anew, and now to the special session of Congress, the President's recommendations as to revising the Neutrality Act (see *NEUTRALITY*). Proclamations and executive orders are mentioned in separate articles to which they relate: e.g., *NEUTRALITY*; *THANKSGIVING DAY*.

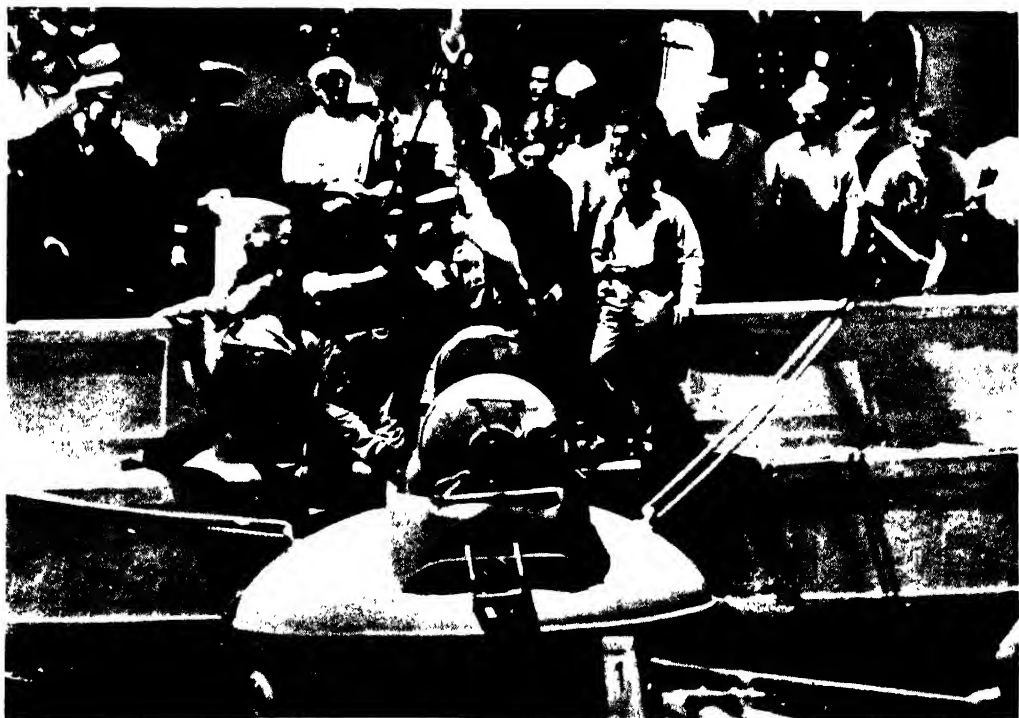
The President's position as to the domestic matters of chief moment in 1940 was, above all, defensive. His submission (address of May 22 to the American Retail Federation) to the proposal to repeal the taxation of undivided profits, a levy that he had demanded in his message of June 19, 1935, as the means for redistributing wealth, abandoned a conflict that he had first sought. His withdrawal of the nomination of the well-known liberal, T. R. Amlie, for the Interstate Commerce Commission, obviated a clash with the Senate; the President followed this step with another, the withdrawal of Floyd H. Roberts, his nominee for a Federal judgeship in Virginia, previously named without regard to the preference of the State's two conservative Senators, and hence rejected by the Senate. The ever-increasing stress that the President, throughout



Courtesy the Associated Press

KING GEORGE VI AND PRESIDENT FRANKLIN D. ROOSEVELT

A remarkable informal photograph by George Skadding made at St. James Church, Hyde Park, New York, on June 12, 1939, during the state visit to the United States of the King and Queen Elizabeth



Associated Press

RESCUE OF FIRST MAN FROM SUBMARINE *SQUALUS*

Fine example of good press photography of a major disaster—the sinking of the *Squalus* with loss of 26 lives off Portsmouth, N. H., on May 23, 1939. Thirty-three members of the crew were rescued by means of the diving bell shown above. Note excellent quality of photograph which was transmitted by wire



Brown Brothers

ATHENIA SURVIVORS REACH CANADA

American and Canadian passengers, rescued from the sinking British liner *Athenia* on Sept. 3, 1939, by the American freighter *City of Flint*, arriving at Halifax, N. S., on September 13. The *Athenia* was the first victim of the war at sea.



Brown Brothers

REPEAL OF ARMS EMBARGO

After signing the so-called "cash and carry" Neutrality Bill at the White House on Nov. 4, 1939, President Franklin D. Roosevelt, seated, hands pens used in the signing to Senator Key Pittman of Nevada, left, chairman of the Senate Foreign Relations Committee, and Representative Sol Bloom of New York, chairman of the House Foreign Relations Committee. In the background (left to right) are William B. Bankhead, Speaker of the House of Representatives; Secretary of State Cordell Hull, and Vice President John Nance Garner.

the year, laid on strengthening the military and naval defenses and otherwise guarding against foreign attack seemed to some observers a matter of less need, after combatants had become locked, in Europe as in Asia, than in earlier situations; but the moment found the country highly susceptible to the suggestion of an invasion and ready to spend money to prevent it; the employment in shipyards, factories, and mines, for the reinforcement of defenses, paid wages to many, if uncounted, thousands, much as the same money would have done if assigned to ordinary public works. The advent of the war abroad, under these circumstances, helped raise the President's popularity, for many came to feel, as he intimated in his speech by radio on September 3 (see above) that war might jump the ocean to America but that he would strive to prevent its doing so.

Though the President had implied part of the unchecked outflow of Federal deficits (see address to the retailers, May 22) to be virtually a beneficent investment of public money for the improvement of the country and of its prosperity, he released in November a suggestion that the proposed addition of about \$500,000,000 to the total to be expended in the fiscal year 1941 for armaments be provided out of some tax to be created by Congress for this special purpose. The Georgian delegation in Congress (Senator George excepted) approved the plan, but it met with little applause elsewhere. The President had suffered somewhat from increasingly pointed journalistic comment on his tolerance of deficits; notably, one of his speeches of 1932, an invective delivered against the "veritable cancer in the body politic" that had been caused by President Hoover's overspending the Federal revenue, had been raked up against him.

The possibility of the President's becoming a candidate for a third term was much in mind during the year, but he gave no hint, to the public, of his will as to this. Nor had he anything to gain by doing so, since if intending to run he would want to pick his own time to start, while if minded to retire he could better hope to designate a successor by waiting his season.

Organization and Personnel. The administrative organization was changed in a number of ways, chiefly under a new act of Congress granting to the President particular and novel powers of reorganizing the administrative part of the Government.

Reorganization Act of 1939. This measure gave existence to a plan that had been taking shape for years; to a great extent it met recommendations that had been made to Congress by President Roosevelt and by President Hoover before him. The President received the authority to alter the grouping of administrative bureaus and offices in the interest of better functioning and greater economy. The conferred power was limited: it extended only over administrative divisions ranking below departments, so that the Executive authority could not abolish a department, create one, or increase or diminish the number of the ten departmental secretaries; specific exemption from the President's new authority extended to the Civil Service Commission, Coast Guard, Army Engineer Corps, Federal Communications Commission, Power Commission, Trade Commission, General Accounting Office, Interstate Commerce Commission, National Labor Relations Board, Securities and Exchange Commission, Board of Tax Appeals, U.S. Em-

ployees' Compensation Commission, Maritime Commission, Tariff Commission, Veterans' Commission, Mediation Board, Railroad Adjustment Board, Railroad Retirement Board, Mississippi River Commission, Federal Deposit Insurance Commission, and Federal Reserve Board of Governors; the President might not prolong the life of an agency beyond its statutory limit; the abolition of an agency might take place only when its function had been transferred to another or others; and above all, Congress reserved the power to veto, or countermand an Executive change by vote of both houses within 60 days after the President's submitting the plan to it. He was required to submit such a plan whenever he exercised his power under the act.

With regard to the last-mentioned check on the President, the distinction between the means left for disapproving an act of executive reorganization and the ordinary course sufficient to stop a legislative measure was pronounced. The failure to pass either house sufficed to prevent the enactment of an ordinary measure; but only the disapproval of both houses, and that within a limited time, could deprive an executive reorganization of its effect, in accordance with the terms of the Act. The delegation of authority to the President was so thorough (within the field to which it applied) that Congress, to countermand his action in the manner provided under the act, must render a vote of the sort that would be needed to repeal or amend the act itself.

The act carried a provision more or less outside of its main object, authorizing the President to appoint as many as six additional administrative assistants, at pay of \$10,000 a year for each one, and to assign to them any lawful duties that he saw fit.

Reorganizations under the Act. The President submitted on April 25 his *reorganization plan number one*. Congress approved it by default, failing to vote a resolution against it. The plan attached or transferred agencies to five major administrative divisions, three of them new. These five were the President's Executive Office, the Department of Agriculture, the new Federal Security Agency, the new Federal Works Agency, and the new Federal Loan Agency.

The President submitted, May 9, his *reorganization plan number two*, and Congress allowed it to go into effect. This plan dealt mainly with changes of organization among the departments.

For disposal of individual units, by these reorganizations, see below, under *Independent Offices and Establishments*.

Legislative Modification of the Plans. It has been noted that Congress, by not disapproving the two plans of reorganization, let them go into effect. It did intervene on two points. The time that plan number one had set for going into effect was June 25; the corresponding date set in plan number two was June 28. Congress altered the arrangement by voting that both plans should have effect on July 1, the opening day of the fiscal year 1940. Both houses passed a joint resolution, enacted early in June, altering the two dates. The resolution as enacted carried the further provision introduced as an amendment from the Senate floor, that the two plans should not be construed to continue any function or agency beyond its statutory date of expiration. In accordance with this resolution the two plans were put in effect on July 1.

Other Shifts During 1939. Without submit-

ting the subject to Congress the President issued, September 9, an executive order for the overhauling of the Executive Office. This followed closely on the outbreak of war between Germany and the British and French governments. The President's order expressed the object "that the Nation may not again be caught unaware" in an international crisis. The authority for changes to be made was asserted to lie in plan number one. On October 14 the President ordered the consolidation of the National Defense Power Committee with the National Power Policy Committee. Another executive order, issued September 6 changed the distribution of Federal authority in the administration of the Panama Canal Zone; Brig. Gen. C. S. Ridley, Governor of the Canal Zone, was put under the orders of the officer commanding the troops stationed in the Zone, Maj. Gen. David L. Stone, "as to the operation of the Panama Canal and all duties, matters, and transactions affecting the Canal Zone."

Personnel. The number of the civil employees of the Federal Government rose, from 919,161, as reported for December, 1938, to 920,310 for June 30, 1939 (just before the reorganization plans went into effect).

Among changes in conspicuous administrative posts were: the appointment of Frank Murphy, ex-Governor of Michigan, to be Attorney-General, succeeding Homer S. Cummings, in January; that of Fred H. Brown, outgoing Democratic Senator from New Hampshire, to succeed Richard N. Elliott as Comptroller-General in April, for a term of 15 years; the resignation, effective December 31, of John W. Hanes as Under-Secretary of the Treasury; that of Wayne C. Taylor, February 16, as Assistant Secretary of the Treasury; the appointment of Paul V. McNutt, ex-Governor of Indiana, to the new post of Federal Security Administrator, under reorganization plan number one (July 10); the naming of Francis B. Sayre, Assistant Secretary of State, to be U.S. High Commissioner to the Philippines, July 26, in place of McNutt; the appointment of Henry F. Grady, in Sayre's place, to be Assistant Secretary of State, August 4; that of Daniel C. Roper, ex-Secretary of Commerce, as Minister to Canada, in May; Myron C. Taylor's nomination, December 23, with the rank of Ambassador, as personal representative of the President on a mission to Pope Pius XII, to promote peace among the nations at war; and the assignment, late in December, of Joseph E. Davies, U.S. Ambassador to Belgium, as adviser to the Department of State, on foreign trade and the war in Europe.

Departments and Agencies. (For detailed treatment of those not fully discussed below, see separate articles.) A great number of the departments and agencies of the administrative branch of the Government were affected by the reorganizations carried out under the Reorganization Act; see *Organization and Personnel*. The general tendency of the change was to restore to long-established departments much of their earlier proportionate shares of the entirety of distributed administrative authority; they regained part of the relative importance that they had lost by the creation of separate agencies to perform additional Federal functions in their several fields.

A number of elements in the general situation of the country modified the courses of some of the administrative bodies. Misgivings as to the

Nation's security, excited by the condition of Europe and coupled with the President's policy of greater armaments, increased the activity of the departments of the Navy and of War. The rise of sentiment for Federal economy and the spread of employment promoted reduction in the WPA and other Federal operations for the support of the unemployed. The foreign situation encouraged new efforts to use Federal credit for stimulating the exportation of existing excess in products of the farm, through the agricultural agencies and some of the Federal bodies acting as middlemen between the Treasury and the individual recipients of loans and subsidies. The spread of antagonism to recent strife in and with organized labor impeded the Federal agencies for the control of the relations of employee and employer. The altered political balance helped produce an act of Congress for the TVA's acquisition of the facilities of a corporate competitor that might otherwise have been extinguished by the duplication of facilities at public expense.

Foreign Affairs. The United States had throughout 1939 a number of serious matters of unfinished business in its dealings with other governments. These included the closely related problems of trade with Japan and trade with China. With these mingled the question of the attitude to be taken toward Japan with regard to its frank pursuit of conquest in the Chinese territories. The difference with Mexico over the latter's expropriation of American producers of petroleum in that country remained in the way of good relations.

In the course of 1939 new and still more insistent foreign problems came up. The United States, a signatory of the Kellogg-Briand treaty against military aggression, had to shape a policy as to two of the lesser European powers, Poland—seized by Germany and Russia in concert—and Finland—attacked by her greater neighbor, Russia, at the outset of winter. Above all, the outbreak of war between Germany and allied France and Great Britain overcast the economic prospects of all the commercial nations and brought to those not already participants the risk of being drawn into the struggle. This great disturbance swept upon the international scene at a time when the United States was busily engaged in efforts to carry out more fully the plans, long prosecuted, of increasing its foreign trade by commercial agreements with individual governments, involving concessions in tariffs or in other means against the entry of merchandise.

See ARGENTINA, BRAZIL, CANADA, CHILE, CHINA, COLOMBIA, COSTA RICA, CUBA, DOMINICAN REPUBLIC, ECUADOR, FINLAND, FRANCE, GERMANY, GREAT BRITAIN, HAITI, JAPAN, LIBERIA, MEXICO, NICARAGUA, NORWAY, PANAMA, PARAGUAY, PHILIPPINES, SALVADOR, URUGUAY, VENEZUELA under *History*.

Problems of the European War. The course of the Government with regard to its position as a neutral in the European war of 1939 is stated in the article on NEUTRALITY. In that course the United States amended its Neutrality Act, which had forbidden the export of materials of war, which Germany lacking the command of the seas could not get; the amended act allowed exports of such materials, after purchaser's payment for them, but shut out American ships from trade with belligerents in the area of war. Apart from this and other steps shaping that portion of the policy of neutrality which lay wholly

within the authority of the United States, several allied matters involving the co-operation of foreign governments may be mentioned. The recognition of the government of Poland was continued, after the conquest of Polish territory, a step tending to encourage the fugitive Polish government not to cede, as some Czecho-Slovakian officials had done, to the powers occupying the country. With regard to the operations of belligerents in the Western Hemisphere and particularly in waters adjacent to the Americas, the United States promoted joint action among American republics in order to prevent hostilities in a broad area of the Atlantic Ocean (see PAN-AMERICANISM).

The naval engagement off the mouth of the Rio de la Plata, December 13, brought the occasion for a more definite commitment of the United States and other American republics as to maintaining neutrality in the designated protective belt of seas. President Boyd of Panama sent to the belligerent governments of Great Britain, France, and Germany, December 23, a protest against the attempt of the German warship *Graf von Spee* to overhau the French merchantman *Formose*, the flight of the German warship into the waters of the River Plate, its scuttling there, and the "sinking or detention of German vessels by British vessels in American waters," with particular reference to the *Duesseldorf* and the *Ussukuma*; all these matters were declared to "compromise the aims of continental protection provided for by the Declaration of Panama"; the American nations were declared to have resolved to start consulting upon further steps—among them, "those which would prevent belligerent vessels from supplying themselves and repairing damages in American ports" if they had committed warlike acts in the waters of the declared zone. While representatives of all 21 republics agreed upon the protest, as its own text asserted, it appeared soon after that Uruguay wanted to distinguish between ships destroying merchantmen and ships protecting them.

The British and French declarations, November 21 and after, of intentions to establish a blockade against exports of German goods in neutral vessels brought on another clash of belligerent and neutral interests. The question arose whether the belligerent could thus extend action against an adversary without overstepping a neutral's right under international law, to receive goods thus exported. The Department of State took the position that importers were entitled to obtain goods from Germany, in neutral carriers, and that reparation could be demanded for harm done to those relying on the receipt of such goods, if the shipments were interned or seized. The matter was not settled in 1939.

The position of the United States on the status of Czecho-Slovakia, seized by German troops in March and thereafter divided into separate dependencies, was one of non-recognition as to the new status; the Czecho-Slovak Minister to the United States retained his accredited position; the Government which he was held to represent became the fugitive provisional Czecho-Slovak government recognized by Great Britain and France.

With regard to Finland, the United States, when the Russians invaded Finland in December, undertook to lend a degree of support to the invaded nation without going to the length of hostilities with Russia. Finland, already heavily

attacked, made its usual payment, December 15, of the sum then falling due on its intergovernmental debt to the United States; as had been arranged, the money was received by the Treasury and set aside to await its appropriation, by the forthcoming session of Congress, "for the benefit of the Finnish people." Secretary of State Hull had previously (November 29) formally tendered the good offices of the United States toward composing the disagreement of Russia and Finland; Russia attacking immediately after, President Roosevelt issued to the press, December 1, a brief statement condemning, though not by name, the Russian government as aggressor; but there was no severance of diplomatic relations with Russia.

The methods used at Washington for helping the Finns included the application (December 2) of the "moral embargo" against Russia, the grant (December 10) of a credit of \$10,000,000 to the Finnish government through the Export-Import Bank (q.v.), and the permission (December 18) for Finland to take from manufacturers about 40 airplanes that would otherwise have constituted the makers' next deliveries to the Navy. As represented in the press the bank credit could not be used for Finnish purchases of materials of war; but only for buying such other goods as American agricultural products. The "moral embargo," a stoppage of exports of specified kinds to certain governments, not by authority, but by the influence or suggestion of the Department of State, had first been invoked against Japanese purchases of airplanes and material therefor; some additional goods were later named as affected by this embargo. Russia was simply added as the second member of the black list.

Relations with Japan. Of the many stresses affecting the relations with Japan during the year, the most obviously important may be mentioned, since they go far toward explaining the nature of occurrences in these relations themselves. The Japanese forces continued, through 1938, the effort to overcome the Chinese republican government and to supplant it. The chief European governments engaged in war within their own continent, became less able to hinder Japanese designs in the Far East. The Japanese government neither carried out wholly nor withdrew the plan, previously adopted, of shutting or partly closing the "open door" to trade between the Chinese ports and the occidental nations. The existing treaty of commerce between Japan and the United States was subject to termination on six months' notice. The "moral embargo," previously mentioned in connection with the Russo-Finnish situation, had been in effect against Japanese purchases of American-made airplanes since 1937.

In May, 1939, the introduction of Japanese troops into Kulangsu, the international settlement at Amoy, followed the killing of a pro-Japanese official of the settlement. The incident formed one of a succession of steps cramping liberty at occidental merchants' trading-posts. The United States, acting in harmony with the British and French governments, landed a small force from a naval vessel. The Japanese move, which to some observers wore the air of an introduction to the eviction of the white foreigners from the Chinese ports, passed into the province of diplomatic discussion; there it lingered for about five months. On October 18 the difficulty was reported to have been settled by an agreement that in-

cluded the appointment of Japanese policemen in this particular settlement.

In the interval the United States made a move of great potential significance to both Americans and Japanese. On July 26 Secretary of State Hull gave notice to the Japanese Ambassador that the United States called for the termination of the two governments' commercial treaty of 1911. The six months' notice under the treaty's terms left it in force until January 26, 1940. Japan, sending a great portion of its yearly total, by value, of exports to the American market and receiving from it great quantities of goods of which the purchaser stood in especial need, had to think of the risk of losing American commerce in the event that the treaty were not renewed. In the United States the manufacturers of silk likewise ran risk of damage in the fall of the treaty, since Japan supplied most of their raw material.

On October 19, just after the announcement of the compromise in the dispute over Kulangsu, Ambassador Grew, speaking at a luncheon in Tokyo, declared bluntly that "bombings, indignities, and manifold interferences with American rights in China" had created deep resentment in the United States. The fact that Grew was but newly returned from consultation with his own Government tended to assure his hearers that his frankness was deliberate and premeditated. The "moral embargo" as to both Russia and Japan was augmented by the addition of molybdenum and of aluminum to the list of materials that "should not" be exported (December 15) and by the further addition of devices for the improvement of aeronautical fuel (December 20). No attempt had been made to discourage American exportation of gasoline to Japan; hence the Japanese had no immediate need of equipment for turning out gasoline for aviation; blacklisting such goods consequently wore the air of preparation for cutting off Japan's (and Russia's) supplies of American gasoline. There were no definite indications at the end of the year as to the course of negotiations for a new commercial treaty with Japan.

Dealings with the Vatican. By December Italy remained the only neutral among the major powers of Europe and indeed, after the United States, the most powerful neutral in the world. It became a matter of policy to seek to unite the influence of these two governments on behalf of the rights of neutrals. Within Italy, but possessing a recognized temporal independence, was moreover the Vatican, which sought to exert the far-reaching power of the Papacy against the spread of war. The United States approached the Vatican, first, of the two powers in Italy. On December 23 President Roosevelt announced the appointment of Myron C. Taylor as his personal representative at the Vatican, with the (courtesy) rank of Ambassador; the appointment did not formally reconstitute the diplomatic relations with the Roman Catholic temporal power, which had lapsed more than seventy years before, but it afforded facility for action in common when the occasion might arise. In the case of the Italian government, the still-recent conquests of Ethiopia and Albania rendered it difficult for the United States to find common ground on which the two powers could directly unite, and nothing was accomplished in that direction up to the end of the year.

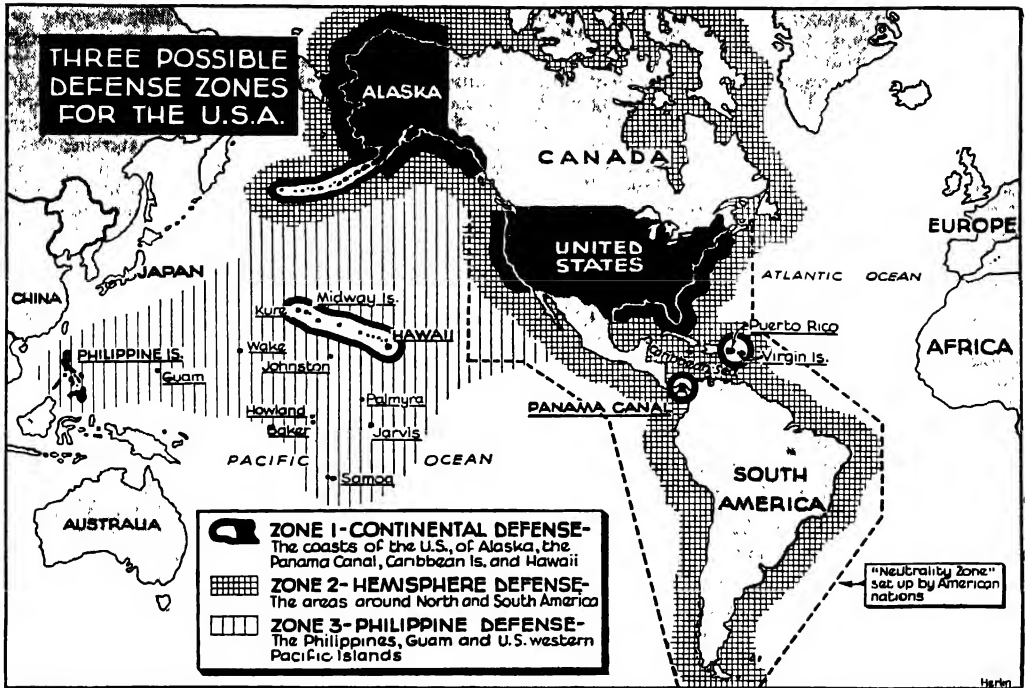
Efforts for New Trade Agreements. Trade

agreements between the United States and three governments were signed and went into force in 1939. These governments and the dates when the respective treaties went into force were: Turkey, May 5; Venezuela, December 16; Cuba (a supplementary agreement), December 23. Negotiations for trade agreements, new or superseding, were in progress or in view at the end of the year, with the following governments: Belgium, Chile, and Canada. Negotiations with Chile and Uruguay, while also still nominally in progress at the year-end, had come to a standstill. See **TRADE AGREEMENTS**.

A part of the subject of inter-American foreign relations was the policy of helping to rehabilitate Latin-American republics' ability to purchase goods in the United States' market. Brazil had, in 1937, received from the United States the option to acquire, for other value, gold up to the sum of \$60,000,000 from the U.S. Treasury. On Oct. 16, 1939, about six weeks after the start of the war in Europe, Brazil began buying gold under this agreement; as that country began to find it difficult to make customary purchases from European lands, the gold thus obtained gave it the power to shift its shopping to the United States. The arrangement was such as, if found satisfactory in its working, might be applied to other American republics. President Somoza of Nicaragua visited Washington in May and obtained for his government, May 22, a credit of \$2,000,000 that might be drawn from the Export-Import Bank for the cost of work on Nicaraguan roads, other public improvements, and economic betterment, in conformity with ideas that President Somoza had discussed with President Roosevelt. The question of hastening, through official action, the reorganization of Latin-American dollar debts in default since the lowest days of the economic depression of the '30s, became a subject of study in Washington late in the year; these debts, as they then were, helped impede the flow of trade that Secretary Hull's policy of commercial reciprocity sought to set in motion.

Claims Against Germany. See **INTERNATIONAL LAW** under *Private Claims*.

Defense. The policy of augmenting the means of National defense, put in force in 1938, continued in 1939 and expanded greatly after the outbreak of war in Europe. The President brought up the subject thrice in successive messages to the incipient regular session of Congress, in the course of nine days: his annual message (January 4) impressed the need of fuller protection in a day of dictators and swift warfare; his budget message proposed (January 5) appropriation of about \$210,000,000 for expenditure on military and naval strength by June 30, 1940, above other authorized money; and his message on defense (January 12) argued for providing this sum and—including it—an authorization of \$525,000,000, for the Army (\$450,000,000), Navy (\$65,000,000), and aeronautical pilots (\$10,000,000). Congress made little effort to pare down these or usual demands. The session's chief enactments for defense accordingly carried, in appropriations for the support of the existing military and naval establishments and for their improvement, well over \$1,500,000,000: of this, the yearly appropriation for the Army carried \$508,789,824, and a supplementary military appropriation act, \$223,389,047; the yearly naval appropriation, \$773,049,151, including about \$253,600,000 toward constructing and arming new vessels. This billion and a half exceeded either the



Courtesy of New York Times

\$1,336,000,000 devoted to like purpose in the President's budget for the year ending with June 30, 1940, or that for the next previous year (1939), when \$1,017,000,000 was thus spent, or the figures for any other year of the decade. The higher appropriations gave high impetus to the program of armament that Congress had authorized in 1938 but that the Administration had hardly yet found time to put to its full pace.

On October 3 the President let it be known that he had decided that the authority lay with him to increase the number of the soldiers, sailors, and marines in the Federal service by about 100,000, and that the Navy and War departments would expend what might be necessary for housing, hospitalization, and the renovation of destroyers. Thus opened the way to further possible whipping-up of the increase in armament, before the next action of Congress.

Steps toward effecting in detail the work of augmenting armament grew more frequent as the year advanced. Progress was made in several determined directions, chiefly toward increasing the fleet; building up the number of the regular Army and its material; producing a huge number of airplanes, to put the United States quickly among the foremost possessors of these implements of war, and educating, with equal haste, the thousands of men needed for tending and flying the planes.

The War Department contracted with civilian schools to train a thousand mechanics for aeronautical duty. By August 10 the Government had contracted for planes and aeronautic engines to cost \$85,000,000 of the sum provided in the supplementary appropriation. Thousands went to work at shipbuilding; the five great navy yards had about 62,000 engaged by August 11. The creation of military aeronautical bases—one of the necessary accompaniments of greater aerial forces—

went on steadily within the Continental United States; in outlying territory, the Army (September 6) acquired a tract of about 1800 acres for a flyers' base at Punta Borinquen, Puerto Rico. Under the authority of a proclamation of the President declaring (September 8) a limited emergency following the outbreak of war among European nations, the Army and Navy started active efforts to recruit their forces to totals more nearly equal to the allowed strength set by statute.

Aid to the Needy. The failure of Congress to appropriate all that the President had recommended in January for the further expenditures of the WPA prior to the end of June was followed by a considerable reduction in the number of those on the WPA's payrolls. See OLD-AGE PENSIONS; RELIEF; WORK PROJECTS ADMINISTRATION.

Government and Labor. The Government's course in the regulation of organized employees' relations with employers, was featured by the effort to establish the level of wages and hours required by the Wages-and-Hours Act of 1938; by a rather protracted strike of miners of soft coal in the Appalachian field, the subsequent liquidation of the Bituminous Coal Commission after it had initiated the re-establishment of prices for coal, and the preparations of the Secretary of the Interior, as the Commission's heir, to renew the application of fixed prices for soft coal; adverse times came upon the NLRB, which lost some important cases in the SUPREME COURT (q.v.), incurred the criticism of both the warring branches of organized labor, and finally underwent investigation by a committee of the House of Representatives. The President brought about a conference between leaders of the C.I.O. and of the A. F. of L., which began March 7 and was abandoned in June after either side had failed to agree to the other's proposals. The conflict be-

tween the two organizations affected the Government's relations to the situation of labor throughout the year.

The change in wages and hours went into effect on October 24. It reduced the working week of those affected to 42 hours, from 44; their lawful minimum rate of pay rose to 30 cents an hour. In principle the regulations went into effect throughout the country, but the law allowed exceptions. The minimum of 32½ cents an hour was especially provided for those engaged in the production of textiles and of seamless hosiery. The changes made more difference in the factories of the Southern midlands than elsewhere, for here a great industrial development had ripened since the beginning of the century, with the aid of cheap and willing labor; nearly one-third of the persons to get higher wages by the new regulations were reported to be in North and South Carolina, Georgia, and Tennessee. The questions as to how closely the new requirements would be enforced and how far they would be opposed by legal process remained for the time unanswered.

The Bituminous Coal Commission proposed, June 16, its new scale of minimum prices for the different sorts of bituminous coal of the Appalachian area. The Commission came to an end a fortnight later, under the terms of the President's reorganization of agencies. Its passing marked the abandonment of an effort to regulate one great industry as a whole, through a single, separate body. It had once before, in 1937, set up regulations as to the minimum prices for soft coal, but it had revoked them, under pressure of suits and injunctions, in February, 1938. Its final proposal of a new scale for the Appalachian field came a month after the conclusion of a six weeks' strike of the United Mine Workers (C.I.O.). This union gained by the settlement of the strike the requirement that, with few exceptions, all miners in the field, including the A. F. of L.'s Progressive Mine Workers, must belong to its organization. As the prices for coal and the amount of work and of wages for the miners stood in close connection, the outcome worked a double advantage for winning union.

See also AMERICAN FEDERATION OF LABOR; CONGRESS OF INDUSTRIAL ORGANIZATIONS; LABOR CONDITIONS; NATIONAL LABOR RELATIONS BOARD; WAGES AND HOURS ADMINISTRATION.

Federal Electric Enterprise. The Tennessee Valley Authority came safely through an investigation (see below, under *Legislation*). Its acquisition of the properties of the Tennessee Electric Power Company is treated in the article on TENNESSEE. This acquisition brought trouble with it, for Tennessee counties that had derived indispensable revenue from the taxation of these properties stood to suffer unless the Government should make good their loss by permitting itself to be taxed or by making periodical equivalent grants. Georgia's new legislation for local taxation of the TVA was a like case in point. The problem of what to do in this matter bore on another debated subject, that of whether the operation of the TVA was paying its way. The partisan dispute on this matter was sterile, as it failed to settle, to the satisfaction of all, whether the Federal advantage secured by removal of former private property from liability to taxation achieved a public gain. The chief engineer of the TVA's electric generating system reported, October 13, that September's revenue

of \$1,250,000 indicated \$15,000,000 a year, or enough to meet current electric costs, allotment of common costs for the several purposes of the dams in the Tennessee River, and a reasonable rate of interest on Federal commitments of capital for the electric enterprise. But in October the protracted lack of rain in the watershed rendered the flow of the river insufficient for the creation of current to meet the demand. The Authority had then to resort to generating electricity at the old Sheffield steam generator at Muscle Shoals. Other steam generators, formerly part of the Tennessee Electric properties, were reported also to have been put to use. The question of the constitutionality of the Federal Government's thus selling electricity other than that from its original hydroelectrical development had never been answered by the Supreme Court.

Independent Offices and Establishments.

The following is a list of the more prominent offices and establishments which functioned as independent agencies of the Federal government, as of June 30, 1939, together with a note on the disposition of those agencies affected by the administrative reorganization of July 1. An asterisk preceding the name of an agency indicates that it is discussed as a separate topic in this volume. Other agencies are included in the articles to which cross-reference is made.

- *Civil Service Commission.
- *Interstate Commerce Commission (ICC).
- U.S. Railroad Administration, transferred to the Treasury Department for conclusion of its affairs.
- Federal Reserve Board. See BANKS AND BANKING.
- *Federal Trade Commission (FTC).
- U.S. Tariff Commission.
- U.S. Board of Tax Appeals.
- Federal Power Commission. See ELECTRIC LIGHT AND POWER.
- Federal Housing Administration (FHA), transferred to the new *Federal Loan Agency on July 1. See HOUSING.
- *Veterans Administration.
- Joint Board (Army and Navy).
- Aeronautical Board.
- U.S. Council of National Defense.
- National Advisory Committee for Aeronautics.
- Federal Board of Surveys and Maps.
- Inland Waterways Corporation, transferred to the Department of Commerce.
- *Reconstruction Finance Corporation (RFC), transferred to the *Federal Loan Agency on July 1.
- *Federal Home Loan Bank Board, with its subsidiaries, the Home Owners Loan Corporation (HOLC) and the Federal Savings and Loan Insurance Corporation, transferred to the *Federal Loan Agency, July 1.
- *Tennessee Valley Authority (TVA).
- Electric Home and Farm Authority (EHFA), transferred to the *Federal Loan Agency.
- Rural Electrification Administration (REA), transferred to the Department of Agriculture. See ELECTRIC LIGHT AND POWER.
- *Farm Credit Administration (FCA), with its subsidiary, the Federal Farm Mortgage Corporation, transferred to the Department of Agriculture.
- Federal Emergency Administration of Public Works, officially renamed the *Public Works Administration (PWA) and transferred to the new *Federal Works Agency.
- Central Statistical Committee, abolished.
- Central Statistical Board (CSB), transferred to the Bureau of the Budget now under the jurisdiction of the Executive Office.
- Federal Emergency Relief Administration (FERA), defunct.
- National Munitions Control Board.
- Works Progress Administration (WPA), changed to the *Work Projects Administration (WPA) and transferred to the *Federal Works Agency.
- *National Youth Administration (NYA), transferred from the Works Progress Administration to the new *Federal Security Agency.
- *Civilian Conservation Corps (CCC), transferred to the *Federal Security Agency.
- Foreign Service Buildings Commission, transferred to the Department of State.
- *Federal Deposit Insurance Corporation (FDIC).

*Commodity Credit Corporation, transferred to the Department of Agriculture.

Securities and Exchange Commission (SEC). See FINANCIAL REVIEW.

Foreign Trade Zones Board.

National Archives.

National Resources Committee, changed to *National Resources Planning Board and transferred to the Executive Office.

*Export-Import Bank of Washington (EIB), transferred to the *Federal Loan Agency.

Federal Prison Industries, Inc., transferred to the Department of Justice. See PRISONS.

*National Labor Relations Board (NLRB).

War Finance Corporation, transferred to the Treasury Department for liquidation.

Railroad Retirement Board. See RAILWAYS.

*Federal Communications Commission (FCC).

*Social Security Board (SSB), transferred to the *Federal Security Agency.

National Power Policy Committee. See ELECTRIC LIGHT AND POWER.

U.S. Maritime Commission. See SHIPPING.

Federal Fire Council.

Disaster Loan Corporation, transferred to the *Federal Loan Agency.

Codification Board.

*National Mediation Board.

Civil Aeronautics Authority (CAA). See AERONAUTICS.

National Emergency Council (NEC), abolished as such on July 1. The Council's film and radio functions were transferred to the *Office of Education. Other functions were assumed by an *Office of Government Reports established under the jurisdiction of the Executive Office. (See EDUCATION, OFFICE OF and GOVERNMENT REPORTS, OFFICE OF.)

Maritime Labor Board. See SHIPPING.

The new independent agencies set up on July 1, as a result of the government reorganization, were the following:

*Federal Loan Agency.

*Federal Security Agency.

*Federal Works Agency.

The Cabinet. The members of the President's cabinet during 1939 were as follows: Department of State, Cordell Hull, Secretary; Treasury Department, Henry Morgenthau, Jr., Secretary; War Department, Harry H. Woodring, Secretary; Department of Justice, Frank Murphy, Attorney General; Post Office Department, James A. Farley, Attorney General; Navy Department, Claude A. Swanson, Secretary until his death in July, 1939, when Charles Edison became Acting Secretary; Department of the Interior, Harold L. Ickes, Secretary; Department of Agriculture, Henry Agard Wallace, Secretary; Department of Commerce, Harry Lloyd Hopkins, Secretary; Department of Labor, Frances Perkins, Secretary. For the activities of the ten government departments, see the topics listed under the title of each, as STATE, U.S. DEPARTMENT OF.

LEGISLATION

76th Congress. (For lists of members and those holding special posts, see CONGRESS). First regular session met January 3; ended August 5. The spirit of the members was affected in two ways by the elections of November, 1938: there appeared a numerous new element composed of 10 Senators and 104 Representatives beginning their initial terms on January 3; seven of the novice Senators and the majority of the new recruits to the House were Republicans; apart from this change in partisan complexion, the results of the election were of a kind to affect the spirit of the remaining Democratic majority, straining the bond by which former success had bound them to the President's leadership. Members showed themselves conscious of the fresh signs of opposition to new taxes, manifest in State legislatures; they felt the significance of the vote in northern agricultural States which

had largely favored Republicans and, by implication, voted non-confidence in the Federal treatment of farmers' troubles. Considerable sentiment for revising the Wagner labor-relations act was offset by realization of the difficulty of approaching so bristling a question in a hurry. The obvious political considerations predisposed Congress to favor farmers in its appropriations, to economize somewhat on the outgo of money through the WPA, and to pay more attention to avoiding increased taxes than to bringing Federal income and outgo into balance.

Chief Results of the Session. Congress contested successfully a number of the measures that the President's opponents thought likely to serve his purposes. It made amends by granting many appropriations and proposals unlikely to afford him great help in conflict with the opposition and by even increasing items of proposed expenditure when farmers' conservative tendencies of 1938 had to be rewarded. The abolition of the frankly punitive tax that the New Deal had imposed on the yearly undivided profits of the corporations tended to steady the economic structure in the position regarded as proper by the holders of investments, rather than by the advocates of redistribution. The limited grant of power to the President to initiate plans for reorganizing some of the many bureaus of the administrative government left his proposals subject to a legislative veto. The President's proposal of a measure to permit extensive lending to private borrowers, out of funds necessarily though not obviously nor on the face of the books guaranteed by the Treasury, met with a rebuff that bore an apparent relation to the President's own effort to cast out from Congress, a year before, Democrats who had been found wanting. The chief bills enacted by the session were as follows:

Agricultural. Agricultural Appropriation Act, providing \$1,194,173,633 for use in the fiscal year 1940, principally in subventions to farmers; Insect Pest Act, for Federal destruction of insect pests (appropriation, \$1,750,000);

Commerce and Banking. The Commerce Under-Secretary Act giving the Secretary of Commerce an aid, designated to perform the Secretary's duties in case of need; Export-Import Bank Act, extending the life of this bank for two years and increasing to \$900,000,000 the allowed debt of the Commodity Credit Corporation; Petroleum-Regulating Act, keeping the Petroleum Act of 1935 in force for three years more; Monopoly Appropriation Act, increasing to \$1,100,000 the funds for investigating monopolies through the Temporary National Economic Committee and related Federal Departments; Federal Reserve Note Act, granting two more years in which the Federal Reserve system might issue notes on the security of direct obligations of the Government;

Support for Administrative Bodies. Treasury and Postal Appropriation Act, providing \$909,627,810 for the work of the Treasury in the fiscal year 1940 and \$790,987,244 (largely recoverable from receipts) for the Post Office; Independent Offices Act providing \$1,678,847,840 for the yearly expenditure of Federal offices, chiefly the Social Security Board (\$351,000,000) and the Tennessee Valley Authority (\$561,093,000); Interior Department Appropriation Act, carrying \$172,604,765 for the year's expenditures of this department, inclusive of the cost of Federal work on several great projects for utilizing rivers' waters; State, Justice, and Commerce Departments'

Act appropriating for these three departments a total of \$122,177,220;

Federal Monetary and Debt-Incurring Powers. Monetary Act, extending for two years the President's authority to alter the gold value of the dollar, and raising the price payable at the Mint for new-mined domestic silver to 55 per cent of its nominal monetary parity; Public Debt Act, removing the limitation of the Federal bonded debt to \$30,000,000,000 but retaining the existing limit of the whole Federal debt, at \$45,000,000,000;

Organization and Personnel. Governmental Reorganization Act, granting the President authority to initiate plans to shift, merge, or abolish the functions of some of the governing agencies, which plans would go into force if not rejected by Congress in 60 days after submission (for details, see above, under *Administration*); Civil Service Retirement Act, making provisions for the retirement of other employees in the classified Civil Service apply to postmasters in the Civil Service;

Aid for the Needy. Relief Appropriation Act, providing \$1,755,600,000 for expenditure in the forthcoming year by the Work Projects Administration (\$1,477,600,000), National Youth Administration (\$100,000,000), and other connected bodies; two Relief Deficiency Acts, providing respectively \$725,000,000 and an additional \$100,000,000 for supplementing the provisions for relief in the fiscal year 1939;

To promote public and private construction—Housing Act, extending for two years the authority of the Housing Administrator to insure mortgages and permitting a higher total of insured mortgages; War Department's Civil Appropriation Act, carrying \$305,188,584, chiefly for public works; TVA Amendment Act, modifying the power of the TVA to borrow and specifying purposes for which it might incur further debt;

Means of National Defense. Military Appropriation Act, carrying \$508,789,824 for military expenditure through the fiscal year 1940; Supplemental Appropriation Act, granting another \$223,389,047 for this purpose; Naval Appropriation Act similarly carrying \$773,049,151; Naval Public Works Act, providing for dry docks and other naval construction in divers parts of the world, to cost \$36,964,500; National Defense Act, to augment and improve in a variety of ways, the military organization; Naval Air Base Act, directing improvements, to the possible cost of \$65,000,000, at 15 Pacific and other flying bases; Strategic War Materials Act, for accumulating reserves of foreign materials potentially needful for making goods for defense; Naval Auxiliary Vessel Act, authorizing purchase and conversion of vessels (in addition to construction thereof) for auxiliaries to the Navy; Naval Aviation Reserve Act, to create a body of commissioned aviators in the Naval Reserve; Panama Road Act, authorizing \$1,500,000 to help Panama build a road to aid the defense of the Panama Canal; Battleship Act, for modernizing five battleships; Military Reservation Act, to permit the purchase of tracts at over a dozen military posts;

Political Practises. Political Activity Act, forbidding the intimidation of persons with regard to their voting on a Federal office, forbidding persons in the Federal administrative employ from interfering in the election for such an office, and making it unlawful for members of the executive branch of the Government (leading positions excepted) to participate in political partisanship. See *POLITICAL ACTIVITY, RESTRICTION OF*.

Taxation. Public Salary Tax Act, subjecting the pay of States' employees to the Federal income tax and allowing States to tax Federal employees' pay; Revenue Act, allowing the tax on undistributed profits of corporations to expire and taxing large corporations' net incomes at 18 per cent instead of graduated rates; District of Columbia Tax Act, imposing an income tax on the inhabitants of the District;

Pensions and Special Aids. Social Security Act, halting the statutory rise in the taxes to provide old-age insurance, and making Federal contribution to States' old-age assistance more liberal; Unemployment Compensation Act, adding to the Federal contribution to the States' expenses for administering unemployment insurance;

Railroads. Railroad Bankruptcy Act, opening temporarily to certain railroads quick means of adjusting defaulted debt with consent from the majority of the creditors concerned.

Bills That Failed. Four important measures sought by the President did not get the approval of the regular session. One would have removed from the existing Neutrality Act the mandate that the President put an embargo on the exportation of munitions to belligerents in case of war abroad (this, however, was done by the later special session). The second, a measure for stimulating business by making loans that would be contingent liabilities of the Federal Government but not part of its statutory debt, would have provided \$3,000,000,000 for this purpose. The third, a further appropriation of \$800,000,000 toward the operations of the U.S. Housing Authority, was defeated through an adverse vote in the House in the closing period of the session; the bill had not been generally read by the members, but Gore of Tennessee declared on the floor that the advances to be made by the USHA would not necessarily be self-liquidating under the terms of the bill and that furthermore that body would gain authority to contract to pay out totals of \$45,000,000 a year for 60 years. The fourth of these bills was a proposed deficiency appropriation of \$50,000,000 toward relief for the poor.

Investigations. Among the inquiries carried on in 1939 by committees created by one or both houses of Congress several were of general public interest and concern. Among these were the proceedings of the Dies Committee, the Monopoly Investigating Committee, the committee investigating the TVA, the La Follette Committee, and the committee investigating the NLRB. The Dies Committee, a holdover from the 75th Congress, was officially the House of Representatives' Special Committee for the Investigation of Un-American Activities; headed by Martin Dies, it continued to bring to notice definite assertions as to the alleged efforts of pro-Nazis and of Communists to organize means of acting against the institutions of the United States. For details of its work see *DIES COMMITTEE*. The Monopoly Investigating Committee, a body created by an enactment of the 75th Congress, was officially the Temporary National Economic Committee, a joint committee of Congress, composed of 3 Senators, 3 Representatives, and persons selected from 6 Federal departments and offices; its inquiry ranged through many tendencies and practices of business, giving special consideration to their bearings on the possible growth of monopoly. The investigation of the TVA was carried on by another offspring of the 75th Congress, the Joint Committee to Investigate the



Brown Brothers

OLD-AGE PENSION CAMPAIGN

Some of the elderly people who voted against the so-called "Ham and Eggs" plan in the California special election of Nov. 7, 1939. The proposal to pay \$30 a week to each citizen of 50 years of age and over was rejected 2 to 1.



Brown Brothers

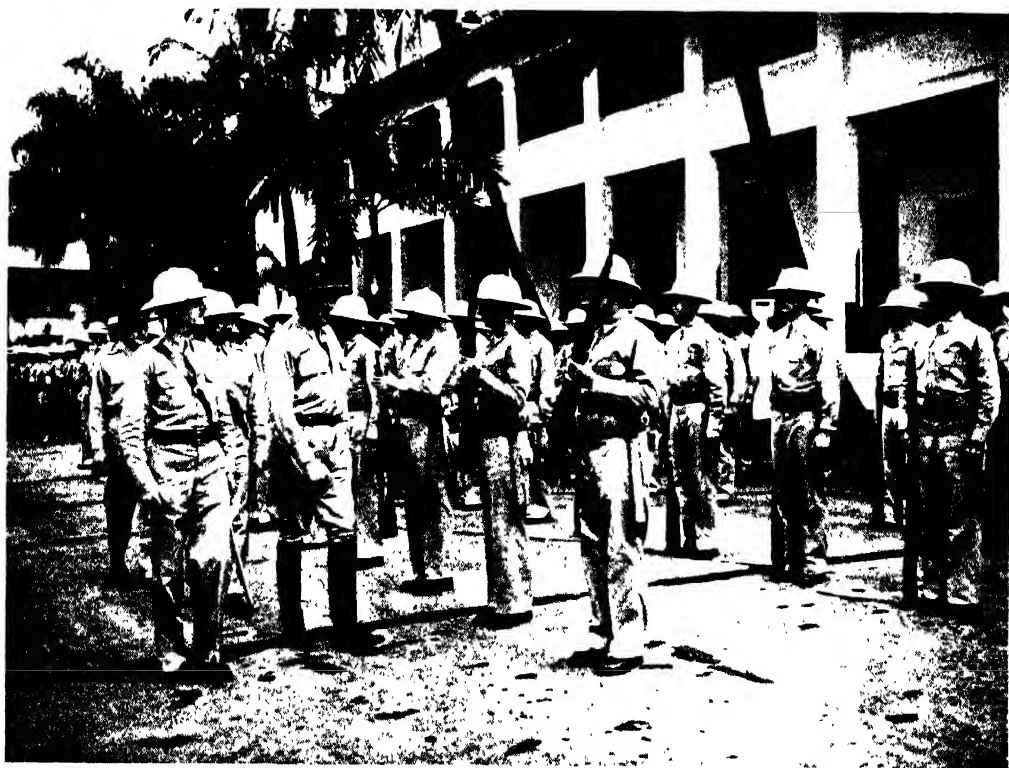
DRIVE FOR FINNISH RELIEF

Girls in Finnish native costumes display funds collected in New York City for use of the Finnish Red Cross—one of numerous American drives to aid Finland's struggle against the Soviet Union.



Wide World

AIRCRAFT CARRIER, U.S.S. *RANGER*, PASSING THROUGH PANAMA CANAL.



Brown Brothers

STRENGTHENING CANAL DEFENSES

Brig. Gen. Joseph M. Cummings, newly appointed commanding general of the Atlantic sector of the Panama Canal Department, inspecting units of the First Coast Artillery upon his arrival at Cristobal Oct. 28, 1939. At his right side is Capt. Ralph W. Russell

Tennessee Valley Authority. The La Follette committee, or Senate Civil Liberties Investigating Committee, was officially only a long-established subcommittee of the Senate's standing committee on labor; it continued to seek and from time to time to make public matter indicative of lawless oppression practised by employers and capitalists against the more active labor unions. The investigation of the NLRB was the work of a new body, the Special Committee of the House for Investigating the National Labor Relations Board; it became productive late in the year.

The committee investigating the TVA, alone of these inquiries, finished its assignment. On April 3 it rendered a report to Congress rejecting the charges of dishonesty brought against his former colleagues by Dr. Arthur E. Morgan, ousted chairman of the TVA, during testimony in 1938. The committee had 5 Democratic, 1 Independent Republican—Senator Frazier of North Dakota—and 3 regular Republican members. The exonerating report was signed by the five Democrats and by the Republican, Frazier; it declared the Morgan charges "without foundation," held the TVA's personnel "able, honest, and efficient," judged the Comptroller-General's criticisms of the TVA largely baseless, approved the TVA's acquisitions of land as "efficiently and honestly managed," admitted that the TVA's methods of accounting had been "extremely unsatisfactory" before 1938, asserted that they had since been corrected, and recommended that the Comptroller-General's audit of the TVA's accounts be discontinued and the task turned over to a private auditing firm. The minority signed a strenuously opposite report declaring the pretension of the TVA to serve as a "yardstick" for the proper cost of electricity "not only meaningless but worse, misleading, deceptive, unfair, and dishonest as a measure of the fairness of the rates of privately owned utilities," and recommended subjecting the electrical business of the TVA to the regulation of State utility commissions and of the Federal Power Commission on much the same basis as in the case of private companies. Another recommendation of the minority, that the Government acquire the properties of companies with which the TVA went into competition, was in a measure carried out during the year.

The committee investigating monopolies had started work about the beginning of October, 1938. It disappointed expectations that it would hunt up sensational revelations as to those whom the President, in his first inaugural speech, had called "money changers in the temple." With regard to the concentration of capital, it brought into view the point that nearly seven-eighths of the \$27,650,000,000 of life-insurance companies' assets was held by the 25 chief companies, and that three corporations controlled 86 per cent of the production of automobiles. With regard to the monopolistic use of patents the investigation represented certain makers of glass containers as exercising the power to admit or exclude new entry into the industry by granting or withholding licenses to use these companies' patents. The President, who had originally proposed to Congress the creation of this committee, asked, in a letter published in the press of May 17, that the inquiry look into the means for putting idle capital to work. At this time the failure to invest liquid capital was a conspicuous phenomenon,

attributed by some of the New Deal's opponents to the impairment of the investor's incentive, by recent economic reforms and experiments. The inquiry was immediately directed into the proposed field: Owen D. Young testified that the General Electric Company, in his opinion, could not have survived earlier depressions nor have obtained great public subscription to its stock, if the present Federal curbs on capital had formerly existed; A. P. Sloan, of General Motors, asserted the need of more profit in business; Assistant Secretary of State Berle proposed to the committee the Federal creation of a system of capital-credit banks. The committee issued, July 16, a preliminary report recommending amendments to the laws on patents and on trusts; in particular, that the use of patents for restraint of trade be forbidden, and that a corporation be forbidden to acquire the assets, though allowed to acquire the stock, of another. Hearings were held in September, on the petroleum industry and on industrial life insurance. Rising prices soon after the outbreak of the war in Europe gave occasion for a study of possible regulation of prices, though Assistant Attorney-General Arnold opposed laws to that end as constitutionally shaky and as liable to send prices up.

The committee investigating the NLRB started hearing testimony early in December. It confronted Edwin R. Smith, member of the NLRB, with matter from the Board's files, indicating that he had sought to promote a customer's boycott of the Berkshire Knitting Mills, to aid a strike among their employees. Testimony from William M. Leiserson, the newest member of the Board, showed that Leiserson had opposed the Board's methods and had refused to sit with it in deciding some cases. A discharged regional director, James P. Miller, attributed his fall from grace with the Board to failure to follow alleged instructions to cause the agency to be "feared" in Cleveland. Another regional director, P. G. Phillips, was called to explain a message to the Board, in which Phillips declared that he had persuaded the city editor of the Cincinnati *Enquirer* not to print an article unfavorable to the NLRB. Records were produced, December 19, with intent to show that Nathan Witt, Secretary of the Board, had concerted with leaders of the C.I.O. to lead the Inland Steel Co. into taking a course that would render it a violator of the National Labor Relations Act.

Special Session. The first special session of the 76th Congress assembled on September 21 and adjourned on November 3. Summoned by the President for a single purpose, it enacted but one major bill. This measure, the Neutrality Act of 1939, did away with the statutory embargo on the exportation of materials of war to belligerents, but prohibited travel to belligerents' ports by ships registered in the United States, save in cases of specified exceptions. For details, see under NEUTRALITY.

UNITED STATES CONCILIATION SERVICE. Congress, in creating the Department of Labor under Section 8 of the Act, gave the Secretary of Labor authority to mediate or conciliate labor disputes. This function was carried on in the Secretary's office until 1917 when a Division of Conciliation was established.

The Service has no law to enforce and no police powers. Its duty is to promote and endeavor to maintain harmonious labor relations. It can enter a situation at the request of either party to

the dispute or some representative of the public, such as mayor, governor, senator, congressman, or upon its own motion if it is believed to be in the public interest. The Service follows the theory that a dispute settled between parties themselves is more enduring than one settled by authority of law or force.

The Service renders assistance by aiding the disputants to settle their differences by negotiations; by holding separate conferences with the respective sides; by adjusting certain minor points in the dispute, leaving major differences for consideration at joint conferences; by drawing on its knowledge of trade agreements; by developing a plan and using same as the basis for discussion between employee and employer; by drafting a plan of settlement independently and submitting it to the parties in the dispute as a recommendation; by devising methods of arbitration through disinterested parties or through a party selected by the disputants. There is no charge for services rendered by this Agency. Sixty field men designated as Commissioners of Conciliation are located in strategic areas throughout the country.

The activities of the Service for the fiscal year ended June 30, 1939, embraced work in all of the States, the District of Columbia, Alaska, and Hawaii. It rendered service in 3541 situations involving directly 1,636,543 workers. Of the total number of situations, 1678 were classified as labor disputes which included strikes, threatened strikes, lockouts, and controversies. These accounted for 1,455,675 workers. The remaining 1863 situations involving 180,868 workers were classified as other services rendered and included arbitrations, conducting consent elections, technical services, supplying information, conferences with employees or employers, and complaints.

The most significant work of the Service was in the prevention of threatened strikes, these being defined as situations in which an actual strike vote had been taken and the employees prepared to strike at a designated time. Because Commissioners of Conciliation were made available in 358 of these situations, the Service prevented 324 of them from developing into actual strikes. These involved over 208,000 workers and if computed on the basis of Bureau of Labor Statistics man days lost by strikes, would reveal a potential saving of over 4,300,000 man days of work and wages.

Of the total situations handled during the fiscal year, over 600 were terminated on the basis of signed agreements. This indicates clearly the establishment of better relationships between Labor and Management, and further, that they are finding it more advantageous to reduce their agreements in collective bargaining to written instruments. Over 19 major provisions were included in these signed agreements—the most important having reference to hours of labor, wages, overtime, grievance procedure, and union recognition. Under the grievance procedure it is revealed in numerous instances that either an arbiter is to be designated by the Conciliation Service or that a conciliator shall be called in before there is an actual stoppage of work.

There has been a marked interest on the part of both Labor and Management in the work of the Conciliation Service—in numerous instances this Agency has been called upon to explain to labor as well as to managerial groups, its functions, and all seem especially interested in the

fact that it has no law to enforce. Commissioners of Conciliation—acting as interpreters of principles, clarifying issues, and making suggestions for shortcuts based on practical experience as to methods, practices, and procedure—have aided materially in establishing more satisfactory relationships between employee and employer.

During the calendar year of 1939, the Conciliation Service participated in 3297 situations involving 1,290,843 workers.

J. R. STEELMAN.

UNITED STATES EMPLOYMENT SERVICE. The United States Employment Service, formerly an agency of the Department of Labor, was transferred to the Social Security Board July 1, 1939, in accordance with the President's First Reorganization Plan. Under this plan the functions of the United States Employment Service were co-ordinated with the unemployment compensation functions of the Board in a newly created Bureau of Employment Security, which administers the Federal aspects of both programmes.

The United States Employment Service was first set up in June 1933, with the passage of the Wagner-Peyser Act. Its purpose was to promote the establishment of public employment offices throughout the country in co-operation with the individual States. The act authorized the United States Employment Service to match State appropriations for the administration of an employment service, provided that the State conformed with Federal standards. The act also directed the Federal agency to develop a national system for clearing labor among the several States, to maintain a public employment office in the District of Columbia, to maintain a service for placement of veterans, and to provide special placement assistance for farm laborers, junior applicants (persons under 21 years of age), and the physically handicapped.

Further impetus was given to the development of State Employment Services by the passage of the Social Security Act in 1935, which required all claimants for unemployment compensation benefits to register for work at a public employment office. In order to carry out these new and increased responsibilities, the State Employment Services found it necessary to expand their facilities substantially. The Social Security Board granted funds to the State Employment Services to meet the additional costs arising out of the unemployment compensation programme and, at present, a major part of the operating funds of the State services are derived from Board appropriations. A further development has been the co-ordination of unemployment compensation and employment service, in almost all States, under a single overhead administrative agency. With the adoption of a similar plan of organization on the Federal level, last July, the direction of these two closely related programmes has become unified in both the State and Federal governments.

By the end of June, 1939, there were 1661 full-time public employment offices and 2695 itinerant points in less populous areas, where service is available on a part-time basis through travelling representatives. Local offices and itinerant points have been strategically located so as to meet the needs of employers and workers throughout the country.

In the past fiscal year (June 1, 1938-June 30, 1939) the public employment offices received 14,-

143,382 applications for work, an increase of 17.7 per cent over the previous year. These included 6,587,309 new applications and 7,556,073 renewed applications. At the end of June 6,282,598 persons were registered as actively seeking work through the public employment offices. During the year 3,134,011 placements were made; 2,225,114 in private industry and 908,897 in public employment. Also, during this period, staff members of the public employment offices made a total of 1,852,806 personal visits to employers in order to solicit their co-operation and to broaden the scope of job opportunities available to applicants.

The National Re-employment Service, a temporary division of the United States Employment Service operated solely by the Federal government, was completely liquidated on July 1, 1939. Originally created to meet the emergency demands of the public works and work relief programmes, it was gradually withdrawn and its facilities incorporated in the State services as the latter agencies expanded.

WILLIAM H. STEAD.

UNITED STATES MILITARY ACADEMY. A government institution at West Point, N. Y., for the theoretical and practical training of cadets for the military service of the United States, opened in 1802. On Sept. 1, 1939, the total number of cadets was 1812. There were 280 members on the faculty. The academy is a component part of the Regular Army of the United States and is maintained solely by appropriations from the Congress of the United States, which in the Fiscal Year 1940 amounted to \$3,331,800 for salaries and maintenance of public works. The Library contained 109,586 volumes. New buildings completed during the year were: Ordnance and Engineering Laboratory, Garage for Mechanized Cavalry, Fire House, 10 sets of Officers' Quarters. Superintendent, Brig. Gen. Jay L. Benedict, U.S. Army.

UNITED STATES NAVAL ACADEMY. A school for the education and training of midshipmen in Annapolis, Md., founded in 1845. The total number of midshipmen at the beginning of the academic year 1939-40 was 2307. The faculty numbered 278. The library contained 88,000 volumes. Midshipmen, immediately after graduation, who are found in all respects qualified, are provisionally commissioned either as Ensigns in the line of the U.S. Navy or as 2d Lieutenants in the U.S. Marine Corps, to fill existing vacancies. Superintendent, Rear Admiral Wilson Brown, U.S.N.

UNIVERSAL CHRISTIAN COUNCIL. See INTERNATIONAL RELIGIOUS MOVEMENTS.

UNIVERSALISTS. A religious denomination which holds as part of its doctrine the universal fatherhood of God and brotherhood of man. Headquarters, 16 Beacon St., Boston, Mass. See RELIGIOUS ORGANIZATIONS.

UNIVERSITIES AND COLLEGES. The 1939 Educational Directory issued by the U.S. Office of Education listed 1709 institutions of higher education in the United States, including 669 colleges and universities, 257 professional schools, 169 teachers colleges, 62 normal schools, 443 junior colleges, and 109 negro colleges. The accompanying table shows these totals, together with the distribution of control of higher education among public, private, and denominational groups and the type of student body.

It was estimated by the Office of Education that about 1,400,000 students would be registered in these 1709 institutions during the school year, 1939-40, and that they would be distributed about equally between public and private institutions. These students were expected to pay more than \$158,000,000 in fees for the year, but this sum represents a relatively small part of the half billion dollars spent annually for college and university education in the United States. The latest final statistics on higher education were made available in a 1935-36 census covering 1706 institutions (although not all returns were usable). In that school year, 1,208,227 students were enrolled and 110,000 full-time staff members were employed. Expenditures included \$419,882,833 for educational and general purposes and \$47,369,407 for capital outlay. The colleges and universities owned 63,000,000 library volumes, buildings, grounds, and equipment valued at \$2,359,418,489, and endowment and other permanent funds worth \$1,623,105,000.

A financial report covering 330 institutions during the 1938-39 school year indicated that the colleges and universities fared much better than in the preceding year. Collections from students amounted to nearly 8 per cent more in 1938-39 than in 1937-38. Government contributions increased by nearly 1 per cent, private benefactions for current purposes by 9 per cent, and revenue from sales and services of related activities by 24 per cent. See **BENEFACTIONS**.

Educational trends are discussed in the article entitled **EDUCATION**. Statistics on higher education in foreign countries are to be found in the articles on the countries under *Education*. For

INSTITUTIONS OF HIGHER EDUCATION IN THE UNITED STATES
(Statistics from U.S. Educational Directory, 1939)

Type of institution	Total	State	Distribution of Control				Student Body		
			District or City	Private	Protestant	Roman Catholic	Men	Women	Coeducational
College or university	669	94	13	169	259	134	99	146	424
Professional school	257	18*	1	150	69	19	86	7	164
Teachers college	170	147	5	12	1	4		16	154
Normal school	61	30	5	17	5	5	2	23	36
Junior college	443	30	169	96	109	39	33	85	325
<i>Negro institutions</i>									
College or university	61	13	2	6	39	1	2	2	57
Professional school	7	1		3	3		1		6
Teachers college	11	9	2					1	10
Normal school	5		1	1	3				5
Junior college	25	5	1	3	16				25
Total:									
White institutions	1,600	319	193	444	443	201	220	277	1,103
Negro institutions	109	28	6	13	61	1	3	3	103
Grand total	1,709	347	199	457	504	202	223	280	1,206

* Includes 3 under Federal control.

educational grants, see **CARNEGIE CORPORATION**, **GENERAL EDUCATION BOARD**, and **ROCKEFELLER FOUNDATION**. See **BENEFACTIONS** and the articles on separate institutions.

UNIVERSITY WOMEN, AMERICAN ASSOCIATION OF. An educational organization founded in 1882 "for practical educational work, for the collection and publication of statistical and other information concerning education, and in general for the maintenance of high standards of education." The chief lines of endeavor of the Association are the establishing and maintaining of standards in education; carrying on a nationwide programme of study in the fields of education, international relations, social studies, economic and legal status of women, and the arts, with varied community activities growing out of study; supporting legislation and other public action to further the Association's objectives; enlarging opportunities for trained women; maintaining a research information service in secondary and collegiate education; and co-operating with university women's groups in other countries to promote international understanding.

The Association, which in June, 1939, had 853 branches and a membership of 63,000, publishes a quarterly *Journal* and holds a biennial convention. The last was held in Denver, Colo., June 19-23, 1939. The receipts for the year were \$270,771 and the expenditures, \$263,698.

The officers for 1939 were: President, Margaret S. Morriss; vice presidents, Louise Pound and Mrs. B. L. Parkinson; treasurer, Mrs. A. Ross Hill; general director, Kathryn McHale. Headquarters are at 1634 I Street, N.W., Washington, D. C.

UPPER VOLTA. See **FRENCH WEST AFRICA**.

URANIUM. See **CHEMISTRY**; **PHYSICS**.

URUGUAY, ū'rōō-gwā or ōō'rōō-gwī'. A South American republic. Capital, Montevideo.

Area and Population. Area, 71,172 square miles; estimated population on Dec. 31, 1938, 2,120,000. Living births in 1937 numbered 41,337 (19.9 per 1000); deaths, 21,561 (10.4); marriages, 13,979 (6.7). Alien passengers entering the country exceeded those departing by 3775 in 1938. The people are almost entirely of European descent, with Spanish, Italian, and Portuguese strains predominating. The language is Spanish. Estimated population of Montevideo, 692,796 (December, 1937); of other cities in 1936: Paysandú, 50,000; Salto, 48,000; Mercedes, 34,000; Minas, 30,000.

Defense. The standing army in 1938 had a peace strength of 808 officers and 7108 of other ranks. Nominal war strength was 50,000. The National Guard (militia) totals about 100,000. One torpedo boat and three patrol vessels are the chief naval units. There is a small air corps with about 50 planes. Defense and police appropriations for 1938 totaled 16,433,663 pesos (18.7 per cent of total budget).

Education and Religion. About 35 per cent of all adults are illiterate. Educational statistics for 1937 showed 1452 public and 172 private elementary schools, with 203,616 pupils; 13,458 pupils in secondary schools; 9918 in evening courses; 1266 in 5 normal schools; and 17,122 in the university (Montevideo). The majority of the people are Roman Catholics, but there is complete religious liberty.

Production. Processing and manufacturing industries account for about 59 per cent of the

total national production, pastoral industries for 24 per cent, and agriculture for about 12 per cent. Production of the chief crops in 1938-39 was (in metric tons): Wheat, 400,600; barley, 15,500; oats, 71,300; linseed, 111,900; corn, 164,500; potatoes, 38,400 (1937-38). Wool output for the year ended Sept. 30, 1939, was 49,900 metric tons. In 1938 963,827 cattle, 1,007,128 sheep, and 88,754 swine were slaughtered in packing plants. Final returns of the 1936 industrial census showed 11,470 establishments with an output valued at 264,813,000 pesos (\$138,683,000), of which 113,977,000 pesos (\$59,689,000) was added in process of manufacture. There were 90,128 employees.

Foreign Trade. Imports in 1938 totaled 96,355,248 pesos (65,375,000 in 1939); exports, 74,394,730 (101,366,000). Market values of leading 1938 exports: Unwashed wool, 35,242,945 pesos; frozen beef, 6,535,161 pesos; washed wool, 6,206,355 pesos; preserved meats, 5,374,607 pesos; chilled beef, 5,174,044 pesos; linseed, 5,098,066 pesos; salted hides, 4,987,929 pesos. Great Britain took 26.2 per cent of the 1938 exports (24.2 in 1937); Germany, 23.5 (13.2); Argentina, 9.5 (9.3); United States, 4.0 (14.1). Of the 1938 imports Great Britain supplied 19.8 per cent (16.8 in 1937); Germany, 16.8 (11.0); United States, 12.1 (13.6). See **IMPORTS AND EXPORTS**.

Finance. Net budget revenues in 1938 were 92,612,000 pesos; net obligations, 89,676,000; surplus (after reserving 1,500,000 pesos for deficit in public service, etc.), 1,436,000 pesos. The 1939 budget estimated revenues at 87,554,000 pesos; expenditures, 87,526,000. Public debt on Dec. 31, 1938, 350,170,089 pesos, against 328,493,258 pesos on Dec. 31, 1937. The average exchange rate of the Uruguayan peso in 1938 was: Free, \$0.4173 (\$0.3623 in 1939); controlled free, \$0.5697 (\$0.4995 in 1939).

Transportation. Railway lines total about 1900 miles, of which three-fourths are British-owned and one-fourth owned by the government. Freight traffic on all railways aggregated 355,200,000 ton-kilometers in 1938. Highways extended 22,487 miles in 1939. Three air lines operated six services over 1151 miles of routes in 1939. A total of 2036 ocean-going ships of 9,342,184 net registered tons entered the ports in 1937.

Government. For the main provisions of the 1934 Constitution, see 1938 **YEAR BOOK**, p. 763. President in 1939, Gen. Alfredo Baldomir (Colorado party), who assumed office June 19, 1938, for four years. The composition of the Chamber of Deputies elected Mar. 27, 1938, was: Colorado party, 64; Blanco party, 29; Socialists, 3; Catholics, 2; Communists, 1. There were 15 Colorados and 15 Blancos in the Senate. President Baldomir's cabinet consisted of 6 Colorado members and 3 Blancos.

HISTORY

Internal Developments. The political tension of preceding years showed a marked recession during 1939, despite reported anti-government activities by a group of military men who controlled the army during the dictatorship of President Terra. A new electoral law promulgated in June tended to eliminate the controversies that had split the two dominant political parties—Colorados and Blancos—into hostile factions. Two factions of Colorados reunited, but a third faction (the Batllistas) and a minority group of Blancos remained opposed both to the electoral law and to reunion with their former associates.

The government continued its programme of internal development. A law of September 9 authorized the National Administration of Alcohol, Fuel and Portland Cement (ANCAP) to issue 1,000,000 pesos of 6 per cent bonds to complete its capital of 6,000,000 pesos authorized by the law of Oct. 15, 1931. The proceeds of the loan were to be used to complete ANCAP's oil refinery and erect a Portland cement plant. The large profits made by the government-owned Bank of the Republic on its exchange control operations were used in large part to stimulate economic activities. Of the 16,753,000 pesos obtained in this manner from June 1, 1938, to Aug. 31, 1939, 3,947,000 pesos were allotted to public works, 1,578,000 pesos to the promotion of pastoral industries, 3,643,000 pesos to export subsidies and premiums on cattle. The government borrowed 3,000,000 pesos for the construction of schoolhouses; a campaign to raise a similar sum by public subscription was carried out.

The problem of obtaining sufficient foreign exchange to pay for Uruguayan imports and other foreign obligations remained difficult. The President called a special conference on April 20 to deal with sharp increases in prices of sugar and certain other imported foodstuffs resulting from the exchange situation. The system of restricting imports from foreign countries to the value of Uruguayan exports purchased by them was continued, with the result that United States trade with Uruguay was sharply curtailed.

With the outbreak of the European war, legislation was enacted to mitigate its effects upon Uruguayan economic activity. On September 28 a tax of 25 per cent was imposed on wartime profits of pastoral producers, the proceeds being used to control prices of articles of first necessity. On September 29 the tax on wool and sheep skins was converted into a 5 per cent export tax, and on October 10 the tax on hides and tallow was similarly converted into a 6½ per cent export tax. On October 15 a commission was appointed to administer the proceeds of these taxes. It fixed prices on most foodstuffs, fuels, and building materials. A decree of October 10 regulated the expropriation of articles of first necessity.

Early in November the government contracted to provide Great Britain with \$863,000 worth of chilled beef, mutton, and lamb. A subsidy of 1.40 pesos per pound sterling was granted cattle raisers out of exchange profits to offset the low prices fixed in the contract. This and other expenses attributable to the war led the Finance Minister to announce on November 21 that there would be a deficit in the 1939 and probably in the 1940 budgets.

Foreign Relations. Uruguay proclaimed its neutrality in the European war on September 6 and joined with Argentina and Brazil in establishing a naval "neutrality patrol" of the adjacent seas. On December 13 three British cruisers forced the German pocket battleship *Graf Spee* to take refuge in Montevideo harbor after an all-day battle fought partly within Uruguayan territorial waters and entirely within the safety zone delimited by the American Foreign Ministers at Panamá in September. The British Government demanded that the *Graf Spee* be forced to leave within 24 hours or be interned. The Uruguayan Government granted the German vessel four days—until 8 p.m. on December 17—to make the battleship seaworthy. Shortly before the expiration of this time limit, the German com-

mander sailed his ship outside of Uruguayan territorial waters and scuttled it rather than accept internment or face battle with British and French warships waiting outside the port. The British and German Governments both protested that Uruguay had violated its neutral duties, the former on the ground that the *Graf Spee* had been granted too long a stay, the latter on the ground that the time allotted was insufficient to make the ship seaworthy. The Uruguayan Government protested to both Britain and Germany against carrying the battle of December 16 into its territorial waters. The issue of violation of the Pan American safety zone was taken up by the other American governments also (see PAN AMERICANISM).

A three-day conference of the Finance Ministers of Argentina, Brazil, Paraguay, and Uruguay met in Montevideo commencing January 27 to work out a programme of mutual commercial and fiscal collaboration (see ARGENTINA under *History* for results). On July 18 delegates of Argentina, Bolivia, Chile, Paraguay, Peru, and Uruguay met in Montevideo to discuss revisions and extensions in the Treaty of Montevideo, signed in 1889, which serves as the cornerstone of international law among the South American countries. The Uruguayan Finance Minister, Dr. Cesar Charlone, late in July went to Rio de Janeiro to sign a treaty facilitating Brazilian-Uruguayan commercial interchange. Earlier in the year a Uruguayan military mission made a formal visit to the Brazilian capital and other cities to return the visit of high Brazilian army officers to Uruguay in 1938.

Uruguayan relations with Argentina were tightened by the visit of President Baldomir to Buenos Aires in the middle of August. Secretary of State Hull announced in Washington October 19 that the United States intended to negotiate a reciprocal trade treaty with Uruguay.

Despite the opposition of Foreign Minister Alberto Guani, the Senate on December 7 passed a bill providing for Uruguay's withdrawal from the League of Nations, though not from the International Labor Office and affiliated technical organizations.

See ARGENTINA under *History*; DEMOCRACY.

USHA. UNITED STATES HOUSING AUTHORITY. See HOUSING; FEDERAL WORKS AGENCY; ARCHITECTURE.

U.S.S.R. See UNION OF SOVIET SOCIALIST REPUBLICS.

UTAH. Area and Population. Area, 84,990 square miles; included (1930) water, 2806 square miles. Population: Apr. 1, 1930 (census), 507,847; July 1, 1937 (Federal estimate), 519,000; 1920 (census), 449,396. Salt Lake City, the capital, had (1930) 140,267.

Agriculture. Utah harvested, in 1939, 996,600 acres of the principal crops. Tame hay, on 507,000 acres, made 968,000 tons (estimated farm value, \$8,325,000); wheat, on 226,000 acres, 3,989,000 bu. (\$2,752,000); sugar beets, 54,000 acres, 694,000 tons (the crop of the previous year, 1938, was valued at \$3,606,000); potatoes, 12,600 acres, 2,016,000 bu. (\$1,109,000); barley, 65,000 acres, 2,405,000 bu. (\$1,058,000).

Manufacturing. The U.S. Census of Manufactures, issuing in 1939 its biennial report, for 1937, on Utah, showed the totals that follow (accompanied by figures for 1935 in parenthesis): Active manufacturing establishments numbered 552 (538), employed 13,094 (10,808) as wage-

earners, and paid wages of \$14,479,158 (\$10,304,262); all the totals of these establishments' products aggregated \$204,857,058 (\$114,167,157), to which the processes of manufacture contributed \$47,945,632 (\$33,899,431). The sharp rise in the total of products of 1937, above that of 1935, was for the most part offset by a corresponding rise in the cost of materials, etc., used in manufacture. The materials so used included much of the output of the mineral industry, which produced more, at generally higher prices, in 1937 than in 1935.

The census for 1937 published data on specific industries supplying somewhat less than half of the aggregate output of manufactured products. Among this group, the smelting and refining of lead achieved \$33,192,327 in output; grain mills, \$9,423,553; canneries and others making preparations of fruits and vegetables, \$7,311,215; meat-packers, \$7,902,811; beet-sugar factories, \$6,613,252.

Salt Lake City was the chief manufacturing centre in 1935; separate figures as to its industry were not published for 1937. Such figures were published, however, as to the manufactures of Salt Lake County, which included much more industrial operation; the county contained, in 1937, 272 establishments, which paid \$7,932,217 in wages and produced goods amounting to \$136,164,050.

Mineral Production. Mines' yearly production of recoverable gold, silver, copper, lead, and zinc in Utah rose to the aggregate value of \$62,385,575 for 1939 (preliminary estimate), from \$43,745,902 for 1938. Copper, the main component in these aggregates, jumped in output, to 341,040,000 lb. (1939) from 216,252,000 (1938); by value, to \$35,468,160, from \$21,192,696. The production of gold increased considerably, to 276,000 oz. (1939) from 200,630 (1938); by value, to \$9,662,100, from \$7,022,050. That of silver increased moderately, to 10,574,987 oz. (1939), from 9,682,732 (1938); by value, to \$7,178,173, from \$6,259,544. The yield of lead diminished in quantity to 130,826,000 lb. (1939), from 131,314,000 (1938); but in yearly value it augmented to \$6,541,300, from \$6,040,444. Similarly in the case of the production of zinc, quantity declined to 66,714,000 lb. (1939), from 67,316,000 (1938); yet by reason of higher prices the yearly total by value advanced to \$3,535,842, from \$3,231,168.

Education. For the academic year 1938-39 Utah's inhabitants of school age (from 6 years to 17, inclusive) were reported as 144,463. Enrollments of pupils in public schools numbered 138,047; this comprised 95,116 in elementary study and 42,931 in high schools (grades 9-12). The year's expenditures for public school education totaled \$12,908,713. This included the year's pay of the 4631 teachers, principals and supervisors, averaging \$1347.71.

Legislation. The regular biennial session of the Legislature met in January. It made a number of changes in the State's system of taxation, including the rates of the general tax on property for general and for specific purposes, the exemptions from this tax, the use of the receipts from the State's tax on gasoline, and the taxation of some forms of personal service.

Political and Other Events. The State Supreme Court affirmed the constitutionality of the Utah minimum-wage law, authorizing the establishment of minimum wages and of maximum hours of permitted work for women and minors in industrial and mercantile employment. It set

aside, however, an order of the Industrial Commission, intended to set such hours for retailers' clerks, on the ground that the commission had failed to hold an adequate hearing on the matter. An improvement in the economic conditions in Utah was evidenced by an increase in the reported sales made by retailers in July, by 7.4 per cent, over those of July, 1938. This was despite payments of \$101,441 for general poor-aid in the State during July, an amount greater by two-thirds than that for July, 1938. The State Medical Association and the State Dental Association each started a plan for the professional care of patients in its field on the basis of payment by the year, whether needing service or not. A fight against official corruption in Salt Lake City (see *YEAR BOOK*, 1938, p. 764) led to the conviction of E. B. Erwin, former mayor, and Harry L. Finch, former chief of police, on charges of conspiracy to permit gambling and places of vice. Each was sentenced, May 6, to a year of prison.

Officers. Utah's chief officers, serving in 1939, were: Governor, Henry H. Blood (Dem.); Secretary of State, E. E. Monson; Auditor, John W. Guy; Treasurer, Reese M. Reese; Attorney-General, Joseph Chez; Superintendent of Public Instruction, Charles H. Skidmore.

UTAH, UNIVERSITY OF. A State institution of higher education in Salt Lake City, founded in 1850. The enrollment for the autumn quarter of 1939 was 4110. The 1939 summer session had an attendance of 795. In extension courses, 2476. The faculty numbered 227. The income for 1938-39 was \$1,351,683. The library contained 142,429 volumes and 36,270 pamphlets. A new course in ground work and flight training for airplane pilots under the Civil Aeronautics Authority was instituted in October 1939. A Field House costing \$215,000, a \$50,000 addition to the Medical School, and a \$15,900 building to replace part of old Mines Building destroyed by fire, are under construction. President, George Thomas, Ph.D.

UZBEK (ööz'bëk or üz'bëk) SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R., north of Afghanistan. It includes the Kara-Kalpak Autonomous Soviet Socialist Republic (79,650 sq. mi.; capital, Nukuss). Total area, 146,000 square miles; population (Jan. 17, 1939), 6,282,446. Chief towns: Tashkent, the capital (600,000 inhabitants), Bokhara, Khiva, Andijan, and Samarkand. Most of the agricultural products are produced from irrigated lands. Cotton (nearly two-thirds of the Soviet Union's output), rice, alfalfa, grapes, wheat, and various fruits are grown. The breeding of Astrakhan sheep is an important occupation. Ninety-five per cent of the peasant farms have been collectivized. Several factories are in operation for the manufacture of farm implements, silk, cotton, cement, paper, leather, fertilizers, and clothing. Mineral products include petroleum, coal, and sulphur. See *UNION OF SOVIET SOCIALIST REPUBLICS*.

VANDERBILT UNIVERSITY. A non-sectarian institution of higher learning for men and women, in Nashville, Tenn., founded in 1872. The enrollment for the autumn term of 1939 was 1809. The faculty numbered 432. The amount of endowment was \$23,213,000; the annual income, \$1,763,000. Volumes in the library numbered 354,767. Chancellor, Oliver C. Carmichael, B.Sc.

VAN DINE, S. S. See *WRIGHT, WILLARD HUNTINGTON*.

VASSAR COLLEGE. A nonsectarian college for women, in Poughkeepsie, N. Y., founded in 1861 and opened in 1865. The enrollment for 1939-40 was 1234. The faculty numbered 184. The endowment amounted to \$9,730,521; the income from funds was \$2,246,050; endowments and trust funds for scholarship aid amounted to over \$1,000,000, yielding an income of approximately \$40,000. The library contained 218,268 volumes. President, Henry Noble MacCracken, Ph.D., LL.D., L.H.D.

VATICAN CITY. A sovereign State, officially known as the State of Vatican City, established within the city of Rome as the seat of the Papacy on June 10, 1929, in accordance with the Italo-Vatican (Lateran) Treaty of Feb. 11, 1929 (see 1929 YEAR BOOK, p. 417). Sovereign in 1939, Pope Pius XII (Eugenio Pacelli), who succeeded Pius XI Mar. 2, 1939.

The area of Vatican City is 108.7 acres, including St. Peter's Square, and in addition 13 ecclesiastical buildings outside of its limits enjoy extraterritorial rights. It has its own coinage, import duties, railway station, and its postal, telegraph, and radio facilities. The census of Dec. 31, 1932, showed 1025 inhabitants, including 853 Italians and 121 Swiss, the latter mostly members of the papal gendarmery. Under the Constitution of June 7, 1929, the Pope exercises full legal, judicial, and executive powers. Pius XII placed the administration of Vatican City and its civil offices in the hands of a commission of Cardinals headed by Cardinal Canali. The legal system is based on canon law and ecclesiastical rules.

Foreign relations are conducted by the Secretary of State. (Cardinal Luigi Maglione was appointed to this office Mar. 11, 1939.) The Holy See maintains diplomatic relations with 39 foreign governments and has unofficial relations by means of Apostolic Delegates with a number of other countries, including the United States.

See ROMAN CATHOLIC CHURCH; AUSTRIA, GERMANY, ITALY, SPAIN, under *History*; UNITED STATES under *Foreign Affairs*.

VEGETABLES. See HORTICULTURE.

VENEZUELA, vén'è-zwě'lá; *Amer. Sp. pron.*, vā'nā-swā'lā. A Republic of South America, consisting of a Federal District, 20 States, and two Territories. Capital, Caracas.

Area and Population. Area, 352,143 square miles; population, 3,467,494 at December, 1936, census (3,552,000, estimate for June, 1938). There are whites, Indians, Negroes, and mixtures of all three races. Registered births in 1938 numbered 118,473 (34.4 per 1000); deaths, 64,294 (18.6). Populations of the capital and five largest State capitals in 1937 were: Caracas (Federal District), 203,342; Maracaibo (State of Zulia), 110,010; Barquisimeto (Lara), 50,774; Valencia (Carabobo), 49,963; Maracay (Aragua), 29,255; and San Cristóbal (Tachira), 22,058.

Defense. Military service was made compulsory in 1933. There is an active army of about 6000 men; a navy of six gunboats and patrol vessels and a few minor craft; a military and naval college, and a school for aviation. Defense appropriations for 1938-39 totaled 40,300,000 bolívares.

Education and Religion. About 57 per cent of the population were illiterate at the 1926 census. Educational statistics for 1938 showed 4142 public elementary schools, with 234,024 pupils; 65 secondary or special schools, with 3705 pupils; and three universities, with 2125 students

(see *History*). Roman Catholicism is the prevailing religion but all others are tolerated.

Production. Agriculture, stock raising, petroleum mining, manufacturing, pearl fishing, and forestry are the main industries. Production of the chief crops was (in metric tons): Coffee, 30,000 in 1938-39; cacao, 20,525 (exports in 1938); cane sugar, 24,500 in 1938-39. Other crops are tobacco, cotton, corn, beans, fruits (especially bananas), potatoes, coconuts, rice, and wheat. Mineral production for 1938 included 201,833,000 bbl. of petroleum (199,407,000 in 1937), 3576 kilograms of gold, and 23,000 metric tons of salt. Some copper, coal, iron, tin, and asbestos is mined. The forests yield balata, tonka beans, divi-divi, vanilla, etc. Petroleum refining is the only large-scale manufacturing industry.

Foreign Trade. Imports in 1938 were equivalent to \$97,772,000 (\$86,029,000 in 1937); exports, \$278,463,000 (\$246,101,000). Petroleum and its derivatives accounted for \$250,661,000 of the 1938 exports. Coffee and cacao are the other chief exports. The United States supplied 56.2 per cent of the 1938 imports (52.8 in 1937); Germany, 11.9 (13.6); United Kingdom, 7.0 (9.3). Of the 1938 exports, \$36,852,000 went to the United States. Most of the petroleum exports went to Aruba and Curaçao for refining. See IMPORTS AND EXPORTS.

Finance. For the fiscal year ended June 30, 1940, estimates of revenues and expenditures balanced at 361,325,000 bolívares (335,261,000 in 1938-39). On July 1, 1939, the Public Works Ministry received an additional appropriation of 26,099,000 bolívares. The public debt on June 30, 1938, totaled 2,800,000 bolívares (internal, 2,700,000). Funds were said to be on deposit to redeem any bonds that might be presented. The average exchange value (bank rate) of the bolívar was \$0.3135 in 1938 and \$0.2924 in 1937.

Transportation. Railways aggregated 589 miles in 1938; highways, 5883 miles; passenger automobiles, 16,419 (registered) in 1939. Construction of the Palmasola-El Palito railway link, started in 1939, will open all-rail transportation from the port of La Guaira to Barquisimeto in western Venezuela. Work was also started on an important highway linking Altagracia, opposite Maracaibo at the entrance to Lake Maracaibo, with Coro, capital of the State of Zulia. It will provide the first link of highway connections between the Maracaibo oil district and the north central district of Venezuela. In 1939 there were eight air services operated by government-owned "Aeropostal" over 2563 miles of routes. During 1938 they carried 8363 passengers, 41,446 lb. of mail, 218,964 lb. of express, and 359,330 lb. of baggage. Pan American Airways planes touch at Caripito, Guanta, La Guaira, Coro and Maracaibo. The Dutch (K.L.T.) line links La Guaira with Aruba and Curaçao. Vessels clearing Venezuelan ports in 1937 aggregated 15,877,000 tons. A contract for additional improvements to the port of La Guaira was awarded Feb. 21, 1939.

Government. The Constitution of July 11, 1936, vests executive powers in a President elected by Congress for five years and ineligible for reelection. There is a Senate of 40 members chosen by the State legislatures and a Chamber of Deputies of 85 members elected by municipal councils. The State legislatures and municipal councils are elected by direct ballot of literate males 21 or more years of age. The Constitution prohibits communism and anarchism. President in 1939, Gen. Eleazar López Contreras (elected by Con-

gress Apr. 25, 1936, after having been named Provisional President by the Cabinet Dec. 18, 1935, on the death of the Dictator-President, Gen. Juan Vicente Gomez).

History. Politics. President López Contreras continued throughout 1939 his efforts to rebuild Venezuela along modern lines, without meeting serious opposition to his policies. On March 13 the sentence of exile passed upon 48 Leftist leaders in 1937 (see 1937 YEAR BOOK, p. 765) was extended for another year, despite protests of prominent liberals in the United States and an amnesty agitation in Venezuela. On March 26 the dissolution of two labor unions was announced because of published proclamations that were deemed by the government an incitement to class strife.

The President denied opposition charges that he aimed at a dictatorship and insisted that he would resign in 1940 previous to the expiration of his term. Elections for the partial renewal of the Senate and Chamber of Deputies were held in January. A cabinet crisis resulted in the replacement of three members of the government on July 21. On August 11 President López Contreras appointed new governors for seven of the States.

The Three-Year Plan. The Three-Year Plan of economic and social rehabilitation, launched in July, 1938 (see 1938 YEAR BOOK, p. 767), was carried rapidly forward. Among the projects initiated under the plan were the railway, highway and port works described above under *Transportation*; the modernization of Caracas through the widening of streets and other works; establishment of a 1,000,000-bolivar fund in the Agricultural Bank for the purpose of encouraging and financing farmers' co-operatives and the production of wheat and rice; dredging of the sand bar at the entrance to Lake Maracaibo; extension of the salt works at Araya; installation of water-works and sewers in various cities and towns; further government subsidization of the coffee industry; passage of a law for the creation of a Central Bank capitalized at 10,000,000 bolívares, one-half subscribed by the government and the other half by public subscription; reorganization of the National Coffee Institute so as to grant it wider powers over the coffee industry (decree of Jan. 18, 1939).

A new law governing the exploration, production and sale of petroleum and other hydrocarbons was published Jan. 6, 1939. It provided for an increased government share of the profits of concessionaires through taxation or otherwise and barred concessions to foreign governments, corporations dependent upon them, and foreign companies not legally domiciled in Venezuela. The first distribution under the profit-sharing law signed Dec. 17, 1938, was made the following March. Each employee's participation in the net profits of his employer was fixed as a percentage of his total wages during the year. This percentage varied from 12.45 per cent in the case of large enterprises to 2.05 per cent in the case of small establishments. In some cases bonuses paid to Venezuelan workers by large petroleum companies were as large as \$1200. One-half of each bonus was paid in cash. The remainder was deposited to the laborer's savings account in a local bank and its withdrawal was made subject to drastic restrictions.

In developing the social service aspect of the Three-Year Plan, President López Contreras obtained the aid and advice of 22 experts from the

United States headed by the Rev. John F. O'Hara, president of Notre Dame University. This volunteer, predominantly Catholic, American-Venezuelan Social Service Mission visited the republic during June 22-29. In conferences with Venezuelan government officials and experts the commission aided in the formulation of plans for the extension and improvement of educational, public health, and social welfare services. A Chilean educational mission engaged by the Venezuelan Government arrived in January. Late in July five fiscal and tax experts loaned to Venezuela by the U.S. Government arrived at Caracas to aid in reorganizing the republic's fiscal and taxation policies and methods.

Economic Situation. The distribution of bonuses in March and the expansion of public works activities, combined with the opening up of new oil fields and the tapping of gold and other mineral resources of the interior, produced a substantial economic boom in Venezuela during 1939. There was no unemployment. High wages paid by the oil companies and other enterprises caused many farm workers to desert their fields, with the result that food production declined and prices of food and virtually all other articles soared to unprecedented levels. With the outbreak of the European war in September, the government was forced to take emergency steps to check further price rises. A decree of September 11 declared a long list of articles to be "primary necessities" and established commissions to fix the prices of such articles and regulate their production and distribution. The shortage of dollar exchange became more acute toward the end of the year, hampering trade with the United States.

Foreign Relations. The provisional trade agreement concluded with the United States in May, 1938, was extended for another year on May 10, 1939. On November 6 the commercial relations of the two countries were placed on a permanent basis with the signing of a reciprocal trade treaty.

In August foreign residents were forbidden by decree to participate in Venezuelan political activities or in foreign-inspired political movements. Since communism was banned by the Constitution, the decree was directed mainly at Fascist and Nazi movements among the Spanish, Italian, and German colonies. A non-aggression pact between Venezuela and Colombia was signed December 17.

Other Events. The shanty town of Lagunillas, supported on stilts over the oil-covered surface of Lake Maracaibo, was destroyed by fire on the night of November 13 with the death of between 50 and 100 of the 2500 residents. The Venezuelan Government prohibited the rebuilding of the town on the site.

Part of the Danish colony of 34 families settled in Venezuela in 1938 returned to Denmark in March, 1939, as a result of dissatisfaction with conditions. The government in the same month permitted 251 Jewish refugees to enter Venezuela after they had been refused admission to Trinidad and British Guiana. Thereafter Caracas authorities refused to admit refugees and other immigrants who did not meet the strict requirements of the Technical Institute of Immigration and Colonization.

VENLOO INCIDENT. See NETHERLANDS, THE, under *History*.

VENTILATING. See AIR CONDITIONING; HEATING AND VENTILATING.

VERMONT. Area and Population. Area, 9564 square miles; included (1930) water, 440 square miles. Population: Census of Apr. 1, 1930, 359,611; Federal estimate for July 1, 1937, 383,000; census of 1920, 352,428. Burlington had (1930) 24,789 inhabitants; Montpelier, the capital, 7837.

Agriculture. Vermont harvested 1,102,000 acres in 1939. Tame hay, occupying most of this land, covered 933,000 acres, which gave 1,133,000 tons (approximate farm value, \$11,217,000); 76,000 acres of corn made 3,040,000 bu. (\$2,158,000); 15,000 acres of potatoes, 1,950,000 bu. (\$2,048,000); 57,000 acres of oats, 1,881,000 bu. (\$922,000); there were gathered for market 810,000 bu. of apples (\$729,000).

Manufacturing. The U.S. Census of Manufactures, issuing in 1939 its biennial report for 1937 on Vermont, showed the following figures (accompanied by figures for 1935, here in parenthesis): Active manufacturing establishments numbering 683 (660) employed 23,682 wage-earners (18,870), paying them \$24,614,697 (\$17,597,752); totals of these establishments' products aggregated \$111,876,051 (\$80,847,121), to which the processes of manufacture contributed \$53,104,364 (\$39,523,906).

The leading lines of manufacture in 1937 included the weaving of woolen goods, to a total output of \$13,593,190; the cutting and shaping of stone from quarries of marble, granite, and slate, producing \$12,620,407 in goods and occupying 3219 wage-earners at pay totaling \$4,314,056; the production of machine tools, totaling \$10,100,455, carried on by 5 establishments, employing 1700 wage-earners and paying them \$2,893,457, or the highest average pay for any large wage-earning classification in the manufactures of Vermont. Products of lumber and timber, totaling \$4,506,595, were listed separately from turned and shaped wooden goods, which amounted to \$3,445,336. Butter-making factories' output amounted to \$1,383,583.

Burlington's manufactures totaled \$9,204,870; Barre's, \$6,556,061; Rutland's, \$3,739,695.

Education. Vermont's inhabitants of school age were estimated, for the academic year 1938-39, as more than 76,000. The year's enrollments of pupils in all public schools numbered 65,970; this comprised 49,602 in elementary study and 16,368 in high schools. Outside of these totals a growing group in classes teaching trades and industries showed 541 enrollments in that year and were reported to have enrolled more than 900 for the year 1939-40. The expenditure of the year 1938-39 for public-school education totaled \$5,469,588. Of this sum, about one-half went to pay the 2750 teachers and principals, averaging \$970.74.

Mineral Production. Vermont's production of its native minerals was credited with a yearly total value of \$7,042,547 for 1937; stone contributed three-fifths of this; slate, one-fifth. Producers' sales of stone increased to the total of 264,480 short tons for 1938, from 194,770 for 1937; but by value they decreased to \$3,148,950 (1938) from \$4,215,766 (1937). The main part of the total value of stone (1938) was made up of some 50,130 short tons of granite (value, \$1,909,895); this in turn consisted mainly of monumental granite to the value of \$1,849,890; there also entered into the stone total 17,950 short tons of marble, in value \$1,003,341, of which the greater part by value, or \$705,997 was monumental marble,

the rest being building marble. The production of slate attained for 1938 the value of \$1,729,655, well exceeding the total, \$1,431,798, for 1937.

Legislation. The regular session of the Vermont Legislature which met in January, offered substantial support to Governor Aiken, in his dispute with the Federal Government over the intended Federal acquisition of land in the State, for use in projected works to regulate floods of the Connecticut River; an appropriation of \$67,000 was voted to provide the means for the State to contest the Federal proceedings in the courts. Shortly after the appropriation was made, the President directed that the plan to build works of flood-control in Vermont should be abandoned, and the appropriation to contest the Federal proceedings was therefore not put to use at the time.

The session voted an appropriation act carrying, for the State's expenditures of the next two years, a total of \$19,488,861, the highest such total in several years. A message from Governor Aiken, on the eve of adjournment, charged that this total exceeded the expected revenue from which the appropriations should come, and that a deficit of about \$300,000 was likely to result. The State's income tax was extended to apply to Federal salaries, in accordance with a recent decision of the Federal Supreme Court holding Federal salaries subject to taxation by a State. The Legislature adjourned April 15.

Other Events. Measures to keep the Rutland Railroad in operation began to take shape soon after the system, May 5, 1938, went into receivership owing \$189,000 in taxes alone, reportedly losing money at the rate of \$2400 a day, and lacking cash to pay the cost of operation for much longer. The holders of the railroad's bonds agreed to accept half of the interest due them in January, 1939, and 30 per cent of subsequent interest. The State administration deferred the payment of the line's overdue taxes for the two years prior to the convening of the Legislature in 1941; authorities reduced the yearly taxes levied on the Rutland in Vermont to \$60,000, from \$125,000; the company's employees consented, in August, 1938, to a reduction of their wages according to a sliding scale which at first cut their remuneration by 17 per cent; and business men in the State united to hire a traffic expert and, through him and otherwise, to bring more freight to the road. The company continued to report net loss, which amounted to nearly \$337,000 for the first eight months of 1939, or about half the corresponding sum of a year earlier; but for September, a net income of \$42,963 was reported. The measures taken to keep the railroad from extinction and preserve its services to the inhabitants of a great part of the State made an exceptional record of team play on the part of separate groups of those concerned.

Officers. Vermont's chief officers, serving in 1939, were: Governor, George D. Aiken (Rep.); Lieutenant-Governor, William H. Wills; Treasurer, Thomas H. Cave; Secretary of State, Rawson C. Myrick; Auditor, Benjamin Gates; Attorney-General, Lawrence C. Jones; Commissioner of Education, Francis Bailey.

VERMONT, UNIVERSITY OF, AND STATE AGRICULTURAL COLLEGE. An institution of higher education in Burlington, Vt. The 1939 autumn enrollment was 1479; the summer school enrollment, 941. The faculty numbered 240. The endowment amounted to \$3,508,463, while the income for the year was \$1,406,090. The library contained 150,230 volumes. President, Guy W. Bailey, LL.D.

VERSAILLES TREATY. See GERMANY and ITALY under History.

VETERANS' ADMINISTRATION. As of June 30, 1939, the organization of the Veterans' Administration consisted of the following officers; Frank T. Hines, Administrator of Veterans' Affairs; Adelbert D. Hiller, Executive Assistant to the Administrator; Harold W. Breining, Assistant Administrator in charge of finance and insurance; Omer W. Clark, Assistant Administrator in charge of pensions and compensations; George E. Ijams, Assistant Administrator in charge of medical and domiciliary care and treatment, construction and supplies; Edward E. Odom, Solicitor in charge of legal activities; and Robert L. Jarnigan, Chairman of the Board of Veterans' Appeals.

As of June 30, 1939, there were in force 605,716 U.S. Government life insurance policies representing \$2,561,712,315 of insurance. During the fiscal year 1939, there were issued 25,341 new policies aggregating \$75,383,423. The actual disbursements made during the fiscal year 1939, to policy-holders of this form of insurance was \$35,331,225.

Military and Naval insurance covers contracts held by veterans of the World War for a form of insurance formerly designated as "War Risk" insurance. The disbursements for this type of insurance totaled \$38,393,938 during the fiscal year 1939.

During the fiscal year 1939, 218,621 United States veterans received hospitalization, 165,576 being admitted during the fiscal period. As of June 30, 1939, 53,861 United States veterans were receiving hospitalization. These veterans were classified by wars as follows: World War, 48,527; Spanish American War, 2715; Civil War, 48; Regular Establishment, 2486; and all other wars, expeditions and occupations, 85.

At the close of the fiscal year 1939, the veteran population reported as present in domiciliary status in facilities under the control and jurisdiction of the Veterans' Administration totaled 15,426. Of this number approximately 91.13 per cent were veterans of the World War; 4.95 per cent, Spanish American War; 3.79 per cent, Reg-

ular Establishment; 0.01 per cent, Civil War; and 0.12 per cent, other wars, expeditions, and occupations.

The preceding table shows the number of pension and compensation cases of living and deceased veterans by wars including Regular Establishment and Honor Roll—Yellow Fever Experiments as of June 30, 1939, and the disbursements during the fiscal year 1939.

During the fiscal year 1939, the total disbursements made by the Veterans' Administration from all appropriations and trust funds (including adjustments on lapsed appropriations) was \$600,221,534.

FRANK T. HINES.

VETERANS OF FOREIGN WARS OF THE UNITED STATES. An organization founded in 1899 and chartered by Congress in 1936, composed of American citizens who have served honorably in the Army, Navy, Marine Corps, or Coast Guard of the United States, in hostile waters or on foreign soil during any foreign war, insurrections, or expeditions, in such service as the United States has officially designated as campaign service and for which it has authorized a campaign badge. (For further details of the organization, see the NEW INTERNATIONAL YEAR BOOK, 1937.)

There are 51 charters of departments located in each of the 48 states, in the District of Columbia, the Territory of Hawaii and in the Canal Zone. Local posts exist in every state, the District of Columbia, the Canal Zone, Hawaiian Islands, Alaska, Philippine Islands, and in France and China. The "Ladies' Auxiliary, Veterans of Foreign Wars of the United States" is a subsidiary organization, with a National Headquarters, with state departments, and with more than 2500 local units.

One of the outstanding events of the year 1939 was the celebration, on September 23, of the 40th birthday anniversary of the Veterans of Foreign Wars of the United States. Founded on Sept. 23, 1899, by a group of 13 Spanish-American War veterans at Columbus, Ohio, the organization now numbers approximately a quarter of a million veterans of the War with Spain, the Boxer Rebellion, the Philippine Insurrection, World War, Nicaraguan campaigns and other armed expeditions under the Stars and Stripes during the last four decades.

Among the major activities of the V. F. W. in the 76th Congress was its sponsorship of S. 1885, a proposal to take the profits out of war by taxing the profits out of war. Progress also was achieved by the V. F. W. in its efforts to obtain wider veteran preference privileges in government employment. As approved June 30, 1939, the Emergency Relief Appropriation Act, Public Resolution No. 24, included provisions requiring employment or retention in employment on WPA projects of veterans (first) and other American citizens (second).

The 1939-40 national officers of the V. F. W. are Otis N. Brown, Greensboro, N. C., Commander-in-Chief; Dr. Joseph C. Menendez, New Orleans, La., Senior Vice Commander-in-Chief; Max Singer, Brighton, Mass., Junior Vice Commander-in-Chief; Robert B. Handy, Jr., Kansas City, Mo., Adjutant-Quartermaster General; Robert T. Merrill, Havre, Mont., Judge Advocate General; Dr. S. T. Bostic, New York City, Surgeon General; Reverend Daniel F. Monaghan,

War	On Roll June 30, 1939	Disbursements Fiscal Year 1939
Honor Roll—Yellow Fever Experiments		
Living veterans	10	\$ 15,000.00
War of 1812		
Deceased veterans	1	190.00
Mexican War		
Deceased veterans	168	102,844.28
Indian Wars—Total	6,776	3,418,795.33
Living veterans	2,525	1,854,131.99
Deceased veterans	4,251	1,564,663.34
Civil War—Total	61,431	33,178,751.64
Living veterans	3,516	4,622,304.21
Deceased veterans	57,915	28,556,447.43
Spanish American War—Total	221,592	125,297,729.98
Living veterans	165,710	105,065,718.76
Deceased veterans	55,882	20,232,011.22
Regular Establishment—Total	43,600	11,839,643.30
Living veterans	34,185	8,929,468.26
Deceased veterans	9,415	2,910,175.04
World War—Total	508,863	242,865,913.83
Living veterans	396,821	187,040,507.12
Service connected	342,072	166,948,863.01
Non-service connected	52,936	17,100,317.81
Emergency Officers	1,813	2,991,326.30
Deceased veterans	112,042	55,825,406.71
Service connected	99,822	51,436,165.79
Non-service connected	12,220	4,389,240.92
Grand Total—Pensions and Compensations	842,441	\$416,718,868.36
Living veterans	602,767	307,527,130.34
Deceased veterans	239,674	109,191,738.02

Milan, Ill., National Chaplain; Omar B. Ketchum, Kansas City, Mo., Chief of Staff; and Carl J. Schoeninger, Detroit, Mich., Inspector General. The V. F. W. maintains its National Headquarters in the Medical Arts Bldg., Broadway at 34th Street, Kansas City, Mo.

VETERINARY MEDICINE. In the field of comparative medicine the year 1939 was marked by the continued protection of the livestock industry through prevention of the introduction of the dangerous contagious diseases that are ever threatening to gain entrance from abroad; progress in the suppression of tuberculosis, Bang's disease, and tick fever; and the advance of knowledge of diseases and parasites and means for their control, through research work. The revelation in the course of investigation, that the chemical phenothiazine is a highly effective anthelmintic in the removal of most of the injurious helminth parasites of sheep and many of those of swine, a single treatment being sufficient, was an outstanding achievement. The preparation and publication during the year of an International List of Animal Diseases met a need of long standing.

Bang's Disease Eradication. The control work with Bang's disease of cattle was continued by the U.S. Department of Agriculture in co-operation with State livestock sanitary authorities and livestock owners. There was a considerable increase in the number of herds and of cattle under supervision in the Federal-State project over the number so reported for 1938, the increase of herds being 30 per cent and of cattle about 14 per cent. By November 1 approximately 21 per cent of the dairy and breeding cattle over six months of age in the United States were under supervision. During the fiscal year ended June 30, 7,591,398 cattle in 724,613 herds were tested, of which 2.9 per cent were reactors, as compared with about 4 per cent the preceding year. On June 30 there were 70,000 State-accredited herds in 43 States in the Bang's disease control project. In 24 States the initial testing of all such cattle had by November 1 been or was being conducted in about 490 counties, and in about 400 of these counties in 19 States the initial tests had been completed, showing an average cattle infection of 2.7 per cent and a herd infection of 5.2 per cent. The results of the work at the close of the fifth year that it had been under way show that good progress has been made.

The accumulated results of calfhood vaccination against Bang's disease, commenced in 1936, in which some 10,000 calves in 261 herds have been vaccinated show that the resistance of heifer calves to infection is increased during their first and second pregnancies and probably later. The results of tests made of 1557 representative samples of blood of ewes killed in abattoirs in six central and western States indicate that brucellosis of sheep is of rare occurrence in the United States. Investigation has shown that horses may become carriers and that if allowed to remain upon the farm are a potential hazard. The finding that the common house rat is a host to the infection, that the infection may pass from rat to rat by living in close contact and may be found in its excretions, has emphasized the importance of rat extermination in the attempt to free the farm from this disease. The findings of the year suggest strongly that the Brucella organism plays a part in periodic ophthalmia of the horse.

Encephalomyelitis, Equine. The production

of more than nine million doses of chick-embryo vaccine and its extensive use combined with other factors, of which an abnormally low rate of precipitation over wide areas in the country was perhaps the most important, resulted in a reduction of the number of cases of equine encephalomyelitis in 1939 to only 8006 reported or about 4 per cent of the 184,662 reported in 1938. However every State west of the Mississippi river was involved, and about one-third of all the counties or parishes in the entire country contained animals affected by this disease. The mortality in 24 of the States where western-type virus only had been proved to occur or was suspected was 26.7 per cent and in nine of the States where eastern-type virus only had been proved or was suspected, 89 per cent. As in previous years 90 per cent of the cases were reported to have occurred during the summer and early fall months. The reported comparative incidence in vaccinated and unvaccinated horses and mules was 0.37 and 1.2 respectively per 1000 animals. All of the 35,000 horses and mules in the Army, National Guard, and R.O.T.C. units were vaccinated between May 1 and June 15 with no unfavorable results or disturbing reactions. Work conducted indicated that even one year after vaccination a high degree of immunity was present.

Mastitis or Garget of Dairy Cows. Much of the work with mastitis of cattle conducted with the view to determining the value of sulfanilamide in its treatment has shown the causative streptococci to be suppressed temporarily while the drug is being administered and that they reappear when the treatment is discontinued. The isolation of a filtrable virus from the blood and from the milk of mastitis cows reported by Broadhurst, Cameron, and MacLean was an event that may prove to be of great importance.

Pullorum Disease. During the fiscal year ended June 30 the National Poultry Improvement Plan for improving the productive qualities of poultry and the reduction of losses from pullorum disease was in operation and 44 States were co-operating with the U.S. Department of Agriculture to this end. More than 42,000 flock owners had their 8,500,000 breeding birds selected and tested according to the provisions of the plan. Since the inauguration of the plan 14 States have commenced a pullorum testing program.

Quail Disease. An investigation of the ulcerative enteritis disease of quail, the most important and a serious affection of that game bird, led to the discovery of a Gram-negative bacterium as the cause rather than the previously described Gram-positive form which is now shown to be a secondary invader. The chronic quail-carrier of this organism was shown to be a factor in maintaining and spreading the disease. Observations indicated that the infection is transmitted, to young quail through eggs laid by such carriers.

Sulfanilamide Therapy. Experimental use of the new drug, sulfanilamide, led to the discovery of its value in the treatment of additional diseases of the domestic animals. Its administration in the treatment of spontaneous canine distemper on the ground that the superimposed infection is more fatal than the virus infection resulted in the recovery of all but one of 17 animals tested, while all but two of 20 control animals succumbed. The meningo-encephalitis associated with canine distemper, considered for years as an incurable affection, was successfully treated with this drug with an estimated recovery of

93 per cent. Its use in the treatment of salmon poisoning, a fluke-born infectious disease of dogs of common occurrence in Oregon, resulted in a drop in the temperature and return of the appetite within 24 to 48 hours of its first administration. The use of neo-prontosil during the course of an outbreak of strangles among horses of a cavalry depot controlled the infection, and rapidly brought about recovery and prevention of the suppuration that usually occurs, when it was administered in the early stages of the disease. Particular mention should be made of the publication of a *Manual* by Doctors P. A. Long and E. A. Bliss in which the present state of knowledge of sulfanilamide, sulfapyridine, and allied compounds is brought together.

Swine Erysipelas. The old world disease of swine due to *Erysipelothrix rhusiopathiae* has in recent years appeared in the United States and spread rapidly, and is now the source of considerable loss of swine, particularly in the Mississippi, Missouri, and Platte River Valleys. It has also been found of importance as the cause of arthritis in lambs. Reports were made during the year of its appearance in flocks of turkeys and the source of loss in several States. It was the cause of a loss of 10,000 ducklings on a farm in Illinois and was identified as responsible for the death of a quail on a game farm in Iowa.

Tick Fever and Cattle Tick Eradication. Cattle tick eradication activities during the fiscal year ended June 30 led to the completion of the work and release from Federal quarantine of two counties and the remainder of one county in Florida, and eight counties and the remainder of four counties, and parts of three counties in Texas. This resulted in an aggregate area of 10,904 square miles of territory released in continental United States leaving but 2 per cent of the original territory placed under Federal quarantine. Satisfactory progress was made in central and southern Florida, where the necessity for removing the tick infested deer from dense swamps delayed completion of the work. In the lower Rio Grande Valley of Texas adjacent to the Mexican boundary, the advance of the work was delayed by reinfestation on several occasions from stray or smuggled tick-infested animals from Mexico. In the work in Puerto Rico and the Virgin Islands where the tropical variety of the fever tick is prevalent, it was necessary to treat the sheep and goats and a few deer on infested premises. In Puerto Rico the western one-third of the island, covering an area of 1243 square miles, was released.

Tuberculosis, Bovine and Avian. The close of the fiscal year on June 30 saw more than 99 per cent of the counties in the United States in the modified accredited area as the result of the tuberculosis eradication work that had been under way since 1917. At that time the nine remaining counties in the non-accredited State of California were engaged in intensive testing. By the end of December all herds of cattle in the United States had been tested at least once with tuberculin. Investigations reported have shown that the avian type of the tubercle bacillus has a limited pathogenicity for cattle; when lesions occur they are in the majority of instances small, localized, and nonprogressive. Occasionally cattle sensitized by this type under natural conditions will react rather typically to mammalian tuberculin. The occurrence of tuberculosis in the sheep is relatively rare, and most of the cases typed have been

avian, but during the year a case of the bovine type was reported.

Turkey, Disease of. The disease of the domestic turkey caused by a protozoan parasite of the white blood corpuscles (*Leucocytozoon smithi*) that has been the source of considerable loss to raisers in Virginia, was discovered to be present in other States, including Alabama, Georgia, South Carolina, and Florida. The parasite was also found in the blood of wild-turkeys in the wild in Georgia, Florida, and Missouri.

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WILLIAM A. HOOKER.

VICTORIA. An Australian State. Area, 87,884 square miles; population, exclusive of full-blood aborigines, 1,880,241 (Mar. 31, 1939, estimate), as compared with 1,820,261 (1933 census). During 1938 there were 30,344 births (16.25 per 1000); 18,955 deaths (10.15 per 1000); and 17,113 marriages (9.16 per 1000). The capital city of Melbourne had 1,035,600 inhabitants on Dec. 31, 1938. Other important cities (with 1938 estimated populations) are Geelong, 39,900; Ballarat, 38,270; Bendigo, 29,920; Warrnambool, 9100; Mildura, 6950. On Dec. 31, 1936, there were 2600 State primary schools with 250,070 enrolled pupils, 149 State intermediate and secondary schools with 34,136 pupils, and 28 senior technical schools 22,345 pupils. Trinity, Ormond, Queen's, and Newman Colleges are affiliated with the University of Melbourne. In 1937, 728 students matriculated and 3559 students attended lectures.

Production. Wheat (18,104,369 bu. in 1938-39 season), oats, barley, potatoes, hay, and grapes are the chief agricultural products. The principal dairy products for 1937-38 were butter, 141,321,445 lb.; cheese, 16,466,038 lb.; bacon and ham, 16,696,404 lb. Livestock in the State (Mar. 31, 1939): 17,007,352 sheep; 1,697,295 cattle; 343,828 horses; 252,462 swine. Wool (greasy) produced in year ending June 30, 1939, totaled 170,465,895 lb.

The estimated value of mineral production for 1938 was £A1,883,861, of which gold accounted for £A1,273,351 and coal, £A539,822. Gross tonnage of ships entering the port of Melbourne amounted to 14,748,360 in 1938. In 1937-38, from

the 9241 factories, with 201,793 employees (including working proprietors), the net value of production was £A64,889,390 (Australian £ averaged \$3.8955 in 1938; \$3.9594 in 1937).

Government. For the year ended June 30, 1939, revenue totaled £A26,985,548; expenditure, £A27,772,790; public debt, £A179,698,000. The executive authority is vested in a governor, assisted by a responsible ministry. Parliament consists of a legislative council of 34 members elected for six years (17 elected every three years) and a legislative assembly of 65 members who are elected for three years by universal adult suffrage. The legislative assembly elected on Oct. 2, 1937, was made up of the following parties: United Australia, 21; Labor, 21; United Country, 20; Independents, 3. Governor, Sir Winston Dugan (assumed office, July, 1939). Premier, A. A. Dunstan. See AUSTRALIA.

VIRGINIA. Area and Population. Area, 42,627 square miles; included (1930) water, 2365 square miles. Population, Apr. 1, 1930 (census), 2,421,851; July 1, 1937 (Federal estimate), 2,706,000; 1920 (census), 2,309,187. Richmond, the capital, had (1930) 182,929 inhabitants; Norfolk, 129,710.

Agriculture. Virginia harvested, in 1939, 3,772,400 acres of the principal crops. Nearly four-fifths of this was in corn, tame hay, and wheat. Corn, on 1,405,000 acres, gave 36,530,000 bu. (estimated farm value, \$26,302,000); tame hay, on 1,036,000 acres, 983,000 tons (\$11,501,000); wheat, on 518,000 acres, 7,511,000 bu. (\$6,459,000). Peanuts, on 161,000 acres, made 189,175,000 lb. (\$6,810,000); barley, 80,000 acres, 2,320,000 bu. (\$1,299,000). Among crops of small acreage in proportion to their value, tobacco, on 167,400 acres, produced 138,232,000 lb. (\$19,897,000); potatoes, on 78,000 acres, 6,786,000 bu. (\$5,700,000); sweet potatoes, on 32,000 acres, 4,128,000 bu. (\$2,477,000). The acreage of cotton, 33,000, and its production, 12,000 bales (\$546,000), were far below the average for the decade 1928-37. Apples gathered for market totaled 7,500,000 bu. (\$4,500,000).

Manufacturing. The U.S. Census of Manufactures' biennial report on Virginia, issued in 1939 and covering 1937, showed the following totals (with figures for 1935 also, here included in parenthesis): Active manufacturing establishments numbered 2384 (2241), employed 132,643 wage-earners (113,654), and paid them \$112,773,796 (\$86,376,752); all these establishments' products aggregated \$908,222,316 (\$697,529,672), to which their processes of manufacture contributed \$335,847,817 (\$247,029,343).

Manufactures of tobacco provided nearly one-third of the aggregate value of the manufactured products. Cigarettes amounting in value to \$279,329,749 were produced in five establishments, employing 4976 wage-earners; chewing tobacco, smoking tobacco, and snuff were manufactured to the total of \$18,779,567. The manufacture of rayon amounted to \$55,897,047; separately listed, the production of weaves of rayon totaled \$8,998,052. The output of divers manufactured chemicals attained \$31,687,241. That of cotton woven goods amounted to \$31,230,313. Other manufactured products were: paper, \$29,306,361; miscellaneous lumber and timber products, \$17,344,259; and grain mills' output, \$16,124,956. Much of the manufacturing was concentrated in Richmond, where the wage-earners numbered 18,014 in 1937 and the manufactured output amounted to \$337,-

801,116. Norfolk County and the politically independent cities of Norfolk, South Norfolk, and Portsmouth numbered 11,238 manufacturing wage-earners and attained, in output, \$93,817,734. Roanoke County and city had 8294 such wage-earners and totaled \$45,024,659 in manufactures.

Mineral Production. Production of minerals native to Virginia attained for 1937 the total value of \$46,019,085; coal contributed nearly three-fifths of this, and in the order given, stone, zinc, and clay products followed in importance. The production of bituminous coal decreased somewhat, to approximately 12,192,000 net tons for 1938, from 13,795,239 tons, in value \$27,177,000, for 1937. Virginia also produced, in 1937, anthracite-type coal worth \$539,000. Output of stone, 5,474,690 short tons for 1938 and 5,061,660 for 1937, consisted mainly of crushed and broken stone; the totals, by value, were \$5,606,470 (1938) and \$5,399,137 (1937). The output of zinc mines, not separately stated by the U.S. Bureau of Mines, was included with that of the closely related zinc mining of TENNESSEE (q.v.). The value of clay products made in 1937 totaled \$2,544,596; this did not include pottery. Lime was produced in 1938 to the value of \$1,014,607.

Education. Virginia's inhabitants of school age (from 7 years through 19) were stated, for the academic year 1938-39, as 735,198. Enrollments of pupils in public schools numbered 575,999; this comprised 457,473 in elementary study and 118,526 in high schools. The year's expenditure for public-school education totaled \$31,981,207. It included salaries for 17,310 teachers, averaging \$940 (superintendents and principals included).

Political and Other Events. Two groups of economic producers in Virginia were hurt in 1939 by conflict partly or wholly foreign to the State: in April the miners of bituminous coal in the Clinchfield Coal Corporation's workings sought to keep on with their employment during the strike waged in the Appalachian area by the United Mine Workers. Pickets interfered, and though the local association of employees complained to the authorities that its members were being kept from work by outsiders, production was stopped or heavily cut; in September, after the outbreak of war in Europe, the foreign buyers of bright tobacco, normally the takers of a great part of Virginia's crop, gave up their plans to purchase; in consequence, the primary markets for this crop could not open at the usual time.

A sharp division in the social and political faith of Virginian Democrats intensified contests at the polls, between the Democratic factions headed respectively by Governor Price and Senator Byrd Price, approver of the humanitarian policies of the Federal Administration, possessed the support of the State's New Dealers; Byrd, as one adverse to the Administration on numerous and conspicuous points, had behind him the Democratic conservatives. Carter Glass, Jr., son of the senior Senator, was defeated, running for the State Senate, by a follower of Price in the nominating primaries; in the election, November 7, Republican candidates won three Senatorships and seven places in the House of Delegates, defeating Democratic candidates of either faction.

Officers. Virginia's chief officers, serving in 1939, were: Governor, James H. Price (Dem.); Lieutenant-Governor, Saxon W. Holt; Secretary of the Commonwealth, R. L. Jackson; Treasurer, Edwin B. Jones; Auditor, S. McCarthy Downs;

Attorney-General, Abram P. Staples; Superintendent of Public Instruction, Dr. Sidney B. Hall.

VIRGINIA, UNIVERSITY OF. A nonsectarian institution of higher education at Charlottesville, Va., founded in 1819. The enrollment for the autumn session of 1939 was 2934. In the extension division were 1547 students. The 1939 summer session had an attendance of 1599. The faculty numbered 179. The productive endowment amounted to \$11,028,877 and the income for the year, \$2,264,775. The library contained approximately 325,000 books. President, John Lloyd Newcomb, B.A., C.E., LL.D., Sc.D.

VIRGINIA POLYTECHNIC INSTITUTE. An institution for the higher education of men, founded in 1872. The enrollment for 1939-40 was 3065. The registration for the summer session 1939 was 672. There were 265 faculty members. The endowment fund totaled \$349,312 and the income for the year, \$14,780. There were 85,000 volumes in the library. A building programme was completed at a cost of \$1,622,000. President, Julian A. Burruss, Ph.D., LL.D.

VIRGIN ISLANDS. An insular possession of the United States; situated to the east of Puerto Rico, from which the islands are separated by about 60 miles of sea. They form the southwestern part of a group, the rest of which is a British possession. The whole group are called the Virgin Islands, outside of the United States, where, however, the name, Virgin Islands of the United States, is generally abbreviated in official parlance to "Virgin Islands" as designating the U.S. possession. The latter's area is 132 square miles; population (1930), 22,012. The island of St. Thomas, has but 22 square miles; St. Croix has 84; St. John, 20. In population, St. Thomas, having (1930) 9834 inhabitants, nearly equals St. Croix's 11,413 (1930); St. John had (1930) 765. Of the population of 1930, 78 per cent were Negroes, 12 per cent of mixed race, and 9 per cent white. The capital is Charlotte Amalie; it is situated on St. Thomas and formerly for a time was itself called St. Thomas.

Production and Trade. St. Thomas, too rugged for extensive agriculture, partly supports its population, mainly concentrated in Charlotte Amalie, by serving the tourist trade and by making articles for sale to tourists and other non-insulars. St. Croix, highly agricultural, raises sugar cane, yielding sugar for export to the United States and used also in making rum; it produces cattle, chiefly for the Puerto Rican market. The islands, mainly St. Croix, produced, in the fiscal year 1939, 4956 tons of sugar, as against 4664 tons for 1938 and 5749 tons for 1937. The crop of 1939 was produced mainly by 950 growers on St. Croix; 400 of these were small homesteaders who had set up with aid from the U.S. Government. A deficiency in St. Croix's usually abundant rainfall, in 1938 and again, though less severe, in 1939, cut down the yield of sugar cane, thereby depressing the prosperity of this island. The production of cattle was reflected in the number exported yearly from the islands; 1034 were shipped in 1937 as against 2189 in 1936; by value \$19,556 (1937) and \$43,085 (1936). The Virgin Islands' exports to the United States amounted for 1939, to \$1,558,523; for 1938, to \$1,220,506. The total for 1939 included bitters to the value of \$412,600; rum, \$227,638; cane sugar, \$376,351. The much higher imports from the United States amounted to \$2,487,805 for 1939 and \$2,358,548 for 1938. Those of 1939 included \$402,702 of grains and their preparations,

\$376,387 of coal and products of petroleum, and \$299,849 of manufactures of iron and steel. Much of the excess of imports was balanced by Federal expenditure in the islands.

Government. Governor, Lawrence W. Cramer, who assumed office Aug. 31, 1935. An act of the U.S. Congress, the Organic Act of 1936, founded the existing scheme of government of the Virgin Islands. The President of the United States appoints a governor—the chief executive authority—a Federal District Judge, and a district attorney. A Legislative Assembly, with power to vote measures of general concern to the islands, is made up of the combined municipal councils of the two subdivisions, that of St. Croix and that of St. Thomas and St. John. These councils are elected by popular vote. The inhabitants of the islands were made U.S. citizens in 1927.

The public finances have the peculiarity of conforming to the municipality as the chief unit, rather than to the general insular government. Governor Cramer's persistent effort, renewed in 1939, to move the Assembly to vote taxes for the support of the insular government made little progress in face of the separate interests of St. Thomas and St. Croix, kept apart by 45 miles of sea. The municipality of St. Thomas and St. John collected, in the fiscal year 1939, \$232,676 in revenues, expended \$273,244, and obtained from Congress an appropriation of \$40,000 towards the year's deficit. The municipality of St. Croix collected \$156,881 in revenues, expended \$249,391, and got from Congress, toward covering the consequent deficit, \$80,000. The Federal Government, besides these appropriations conducted a program of public works in the islands during the year. It did not, however, proceed further with its scheme of establishing inhabitants on homesteads.

History. Governor Cramer in his report for the fiscal year 1939 gave strong support to the islands' demand for the revision of Federal laws that handicapped the Virgin Islands' production of sugar cane, their only substantial means of attaining an adequate export trade. These laws were the Sugar Act of 1937, which failed to allow to producers in the Virgin Islands the benefit payments provided to other producers under the American flag, and an earlier act, imposing an export tax, originally with a view to compensating the acquired territory for its loss of revenue from duties on importations of U.S. goods. The combined effect of these two obstacles was to force the grower in the Virgin Islands, according to Governor Cramer, to realize from \$16 to \$18 less per ton on the sugar content of his sugar cane than other growers. Under this handicap he produced at a loss while his competitors under the United States' jurisdiction could still make a profit. The application of the Federal Wage and Hour Act in the islands, though the extent of its effect was uncertain, tended to heighten the difficulty, and the continuance of relative drought in the cane-growing area of St. Croix kept the trouble at the acute stage.

Robert Morss Lovett, former professor at the University of Chicago, was appointed government secretary in August. The U.S. Navy acquired from the Department of the Interior, May 4, three small islands off St. Thomas, inclosing a lagoon to be used as a port for seaplanes.

VITAL STATISTICS. For the second successive year, the United States birth rate showed a slight increase, according to the provisional report of the U.S. Bureau of the Census for the calendar year 1938. The rate for 1938 was 17.6

births per 1000 population, as compared with 17 in 1937 and 16.7 in 1936. This increase is slight, however, in comparison with the decline apparent during the last two decades. In 1921 there were more than 24 births for every thousand persons in the country. In the same year, there were more than two births for every death, while the proportion in 1938 was 1.66 births to one death. The actual number of births in 1938 was 2,286,962.

There were 1,381,391 deaths in continental United States in 1938, a rate of 10.6 per 1000 population, as compared with 17.6 at the beginning of the century. The death rate varied by States from less than 8 in the Dakotas and Oklahoma to 14.1 in New Mexico and 14.6 in Arizona. The high rates in the two latter States was attributed in large measure to the number of nonresident deaths from tuberculosis. Diseases of the heart continued, as in preceding years, to be the leading cause of death. Cancer and other malignant tumors were second, cerebral hemorrhage and related diseases were third and nephritis fourth. A striking decrease was apparent in respect to pneumonia, which caused 119,378 deaths in 1936 and only 87,923 in 1938. The number of deaths from selected causes and the rates per 1000 population are shown in the accompanying table.

The infant mortality rate, which has dropped by almost a third in the past 18 years, showed a further decline in 1938 to 51, as compared with

54.4 in 1937 and 75.6 in 1921. According to the statisticians of the Metropolitan Life Insurance Company, premature birth is now the leading cause of infant deaths; diarrhea and enteritis, which caused 21 per cent of the deaths in 1917, now cause only 8 per cent, and mortality from congenital debility has declined 60 per cent. The Bureau of Census figures on maternal deaths showed 9953 deaths from all puerperal causes in 1938, a rate of 4.35 per 1000 live births, as compared with 4.88 in 1937 and 5.93 in 1934. See ACCIDENTS.

VITAMINS. See BIOLOGICAL CHEMISTRY; LIVING COSTS AND STANDARDS; MEDICINE AND SURGERY.

VOCATIONAL EDUCATION. See NATIONAL YOUTH ADMINISTRATION; EDUCATION; PSYCHOLOGY.

VOLGA-GERMAN AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

WAGE AND HOUR DIVISION. The Fair Labor Standards Act of 1938, the administration and enforcement of which is vested in the Wage and Hour Division of the U.S. Department of Labor, places a "floor" under wages and a "ceiling" over hours of work and prohibits "oppressive" child labor for employees engaged in interstate commerce or in the production of goods for interstate commerce.

From Oct. 24, 1938, effective date of the Act, until Oct. 24, 1939, the wage "floor" was 25 cents

NUMBER OF DEATHS (EXCLUSIVE OF STILLBIRTHS) FROM SELECTED CAUSES, AND DEATH RATES—UNITED STATES, 1936-1938

(Number and rate for 1938 are provisional)

Cause of death	Number of deaths			Rate per 100,000 estimated population		
	1938	1937	1936	1938	1937	1936
Total deaths.	1,381,391	1,450,427	1,479,228	1,060.9	1,122.1	1,151.8
Typhoid and paratyphoid fever.	2,418	2,743	3,182	1.9	2.1	2.5
Measles.	3,296	1,501	1,267	2.5	1.2	1.0
Scarlet fever.	1,206	1,824	2,493	0.9	1.4	1.9
Whooping-cough.	4,778	4,981	2,666	3.7	3.9	2.1
Diphtheria.	2,556	2,637	1,065	2.0	2.0	2.4
Influenza.	16,520	38,005	33,811	12.7	29.4	26.3
Dysentery.	2,933	2,974	3,122	2.3	2.3	2.4
Erysipelas.	712	1,246	2,006	0.5	1.0	1.6
Acute poliomyelitis and acute polioencephalitis.	487	1,461	780	0.4	1.1	0.6
Epidemic cerebrospinal meningitis.	1,024	2,208	3,020	0.8	1.7	2.4
Tuberculosis of the respiratory system.	58,027	63,330	65,043	44.6	49.0	50.6
Tuberculosis (all other forms).	5,709	5,994	6,484	4.4	4.6	5.0
Syphilis.	12,670	13,221	12,612	9.7	10.2	9.8
Malaria.	2,378	2,729	3,943	1.8	2.1	3.1
Cancer and other malignant tumors.	149,214	144,774	142,613	114.6	112.0	111.0
Rheumatism and gout.	3,716	3,706	4,004	2.9	2.9	3.1
Diabetes mellitus.	31,037	30,587	30,406	23.8	23.7	23.7
Pellagra.	3,205	3,258	3,740	2.5	2.5	2.9
Alcoholism (acute or chronic).	2,569	3,305	3,714	2.0	2.6	2.9
Progressive locomotor ataxia (tabes dorsalis), general paralysis of insane.	5,331	5,055	5,453	4.1	3.9	4.2
Cerebral hemorrhage, cerebral embolism and thrombosis.	111,567	111,753	116,562	85.7	86.5	90.8
Diseases of the heart.	350,168	346,401	341,350	268.9	268.1	265.8
Arteriosclerosis (except coronary), idiopathic anomalies of blood-pressure.	22,208	23,059	23,893	17.1	17.8	18.6
Pneumonia (all forms).	87,923	110,009	119,378	67.5	85.1	93.0
Ulcer of stomach and duodenum.	8,403	8,765	8,566	6.5	6.8	6.7
Diarrhea and enteritis (under 2 years).	14,107	14,406	15,612	10.8	11.1	12.2
Diarrhea and enteritis (2 years and over).	4,401	4,519	5,339	3.4	3.5	4.2
Appendicitis.	14,300	15,340	16,480	11.0	11.9	12.8
Hernia, intestinal obstruction.	12,612	13,111	13,433	9.7	10.1	10.5
Cirrhosis of the liver.	10,808	10,960	10,587	8.3	8.5	8.2
Biliary calculi and other diseases of the gall-bladder and biliary passages.	8,469	8,636	8,863	6.5	6.7	6.9
Nephritis.	100,520	102,877	106,865	77.2	79.6	83.2
Puerperal septicemia.	3,333	3,727	4,606	2.6	2.9	3.6
Other puerperal causes.	6,620	7,042	7,576	5.0	5.4	5.9
Congenital malformations.	12,102	11,842	12,093	9.3	9.2	9.4
Suicide.	19,802	19,294	18,294	15.2	14.9	14.2
Homicide.	8,799	9,811	10,232	6.8	7.6	8.0
Automobile accidents (primary).	30,564	37,205	35,761	23.5	28.8	27.8
Other motor vehicle accidents.	2,018	2,438	2,328	1.5	1.9	1.8
Other accidents.	61,223	65,562	71,963	47.0	50.7	56.0
All other causes.	181,658	188,131	196,023	139.5	145.5	152.6

an hour and the hours "ceiling," without payment of time and a half for overtime, 44 a week. On Oct. 24, 1939, the statutory minimum wage advanced to 30 cents an hour and the statutory workweek was lowered to 42 hours. An estimated 690,000 workers received wage increases and 2,380,000 workers had their hours reduced or were paid extra for overtime as a result of the Oct. 24, 1939, changes in the law. No further change in the general minimum wage rate is required until 1945, when 40 cents an hour will become the minimum. The workweek will be reduced to 40 hours Oct. 24, 1940. There will be no further reduction in the maximum workweek.

Exempted from the wage and hour provisions of the Act are employees in certain categories, notably those employed in agriculture, as seamen, fishermen, and in retail and service establishments the greater part of whose selling or servicing is in intrastate commerce.

Provision is made for the employment of learners, messengers, apprentices, and mentally or physically handicapped workers at subminimum wages upon certification by the Administrator of the Division. Limited exemptions from the overtime pay provisions are granted to industries found by the Administrator to be seasonal, and to certain employees employed in the processing of agricultural or horticultural commodities within the "area of production" (as defined by the Administrator).

Provision is made for the establishment of minimum wages, industry by industry, at a rate higher than the statutory minimum, but not in excess of 40 cents an hour, by wage orders the Administrator is empowered to issue upon the recommendation of industry committees to be appointed by him. The Act requires that each industry committee shall consist of representatives of employers and of employees in the industry, and of the public, in equal numbers, and that they shall be chosen with due regard to the geographical regions in which the industry is carried on.

Organization of the Division has developed to discharge effectively the major responsibilities imposed by the Act upon the Administrator; namely, (1) enforcement of the minimum wage and maximum hour provisions, (2) the drafting of definitions and the issuance of regulations, (3) the operation of the authorized techniques incidental to the work of the industry committees and the issuance of wage orders, and (4) the certification of learners, messengers, apprentices and handicapped workers for employment at wages less than the minimum.

Responsibility for enforcement is largely vested by the Administrator in the heads of 15 regions with headquarters in Boston, New York, Philadelphia, Newark, Richmond, Charlotte, Atlanta, Birmingham, Nashville, Cleveland, Chicago, Minneapolis, Kansas City, Dallas, and San Francisco. The child labor provisions are administered and enforced by the Children's Bureau of the U.S. Department of Labor.

The Administrator is authorized to enter into co-operative agreements with the several States for the utilization of State Labor Department inspectional staffs on a reimbursable basis in the work of enforcement and the making of inspections and the first such agreement, made with North Carolina, became effective Nov. 1, 1939.

Nine industry committees, covering the textile and apparel industries, had made minimum wage recommendations as of Jan. 1, 1940, and three

wage orders had been issued, as follows: For cotton, silk, and rayon textiles, 32½ cents an hour; for hosiery, 32½ cents in the seamless branch and 40 cents in the full-fashioned branch; for millinery (effective Jan. 15, 1940), 40 cents. A committee for the railroad carrier industry was appointed in November but as of Jan. 1, 1940, it had not reported a recommendation.

Prior to Jan. 1, 1940, 139 cases involving alleged violations of the Act had been taken to the courts. In all but three of the cases in which court action had been completed the Division was upheld. Fines approximating \$115,500 had been paid by defendants in 41 criminal cases. Fines in a considerably larger amount were suspended upon condition that unpaid minimum wages or overtime compensation be paid to aggrieved employees, coupled with promises of future compliance. Approximately 800 cases of nominal or non-wilful violation were closed without court action upon the restitution by employers to affected employees of wages illegally withheld. No case arising under the Act had yet reached the United States Supreme Court, but the constitutionality of the Act had been upheld in several Federal District Courts, notably by Judge R. A. Cooper in a case against the Eastern Sugar Associates of Puerto Rico, and by Judge William H. Holly in a case against Montgomery Ward and Company of Chicago.

In 1939 seasonal exemptions were granted for various branches of tobacco handling and packing, natural ice harvesting and packing, brick manufacturing in Maine, New Hampshire, and Vermont, the mining of placer gold in various northern States and Alaska, the processing of hybrid seed corn, and the milling of sugar cane in Louisiana. About 5000 applications were received, and approximately 2400 certificates issued, for the employment of handicapped workers at subminimum wages. Certificates, limited as to number and time, were issued for the employment of several thousand learners, notably in the hosiery, apparel, knitted outerwear, knitted underwear, and textile industries.

Elmer F. Andrews, first Administrator, resigned effective Nov. 30, 1939. At that time Lieut. Col. Philip B. Fleming, U.S.A., was assigned by the President to the Department of Labor to serve as co-ordinator for the Wage and Hour and the Public Contracts Divisions. Harold D. Jacobs, who had been Assistant Administrator in charge of information, received a recess appointment as Administrator.

See LABOR CONDITIONS; LABOR LEGISLATION.
HAROLD D. JACOBS

WAGES. See RELIEF.

WAKE ISLAND. An island in the North Pacific (19° N. and 166° 20' E.), 2130 miles west of Hawaii, annexed by the United States in 1898 and created a base for Pan American Airways' transpacific service in 1935. Area, about 2600 acres. The population consists of a few men in charge of the airport. In 1939 Congress appropriated special funds for the construction of a naval air and submarine base on Wake Island.

WALES. See GREAT BRITAIN.

WALLIS ARCHIPELAGO. See NEW CALEDONIA.

WALSH, FRANK (FRANCIS) P(ATRICK). An American lawyer, died in New York, May 2, 1939. Born in St. Louis, Mo., July 20, 1864, he was educated at St. Patrick's Academy there, and in

1889 was admitted to the Missouri bar. Interested in the improvement of social and industrial conditions he served on the Kansas City Tenement Commission (1906-08) and was attorney for the Board of Public Welfare (1908-14) and of the Board of Civil Service (1911-13), both of that city. His work in these fields led to his appointment as chairman of the Federal Commission on Industrial Relations in 1913. Two years later he resigned to become editor and publisher of the *Kansas City Post*, which position he held until 1916.

Mr. Walsh returned to the practice of law in 1916 and continued his work as legal adviser to labor organizations. In 1918 he was the attorney for the employees in the stock yards arbitration and subsequently was the lawyer for the International Brotherhood of Electrical Workers and the International Ladies Garment Workers Union. During the course of his legal career he became known as a defender of civil liberties, having worked for the release of Tom Mooney for 20 years and having defended William Z. Foster on a charge of criminal syndicalism.

During the World War Mr. Walsh was a member of the War Labor Conference Board (1918), serving as joint chairman with William Howard Taft, and from April to December of that year he was a member of the National War Labor Board. A Democrat in politics, in 1924 he supported Robert M. La Follette for the presidency on the Progressive ticket, and in 1928 formed a Progressive League for the support of Alfred E. Smith. In 1932 and in 1936, his National Progressive League advocated the election of Franklin D. Roosevelt. By appointment of the Governor, he was made a member of the N. Y. Commission on the Revision of the Public Utility Laws in June 1929, and in May, 1931, he was named chairman of the Power Authority of the State of New York.

Mr. Walsh was chairman of the American Committee on Irish Independence and represented that organization at the Peace Conferences at Versailles. During 1933-35 he was president of the Society of Medical Jurisprudence.

WAR. See **EUROPEAN WAR** and the articles on the various countries involved under *History*; **CHINA, JAPAN, and MONGOLIA** under *History*; **ARMAMENTS, COST OF; MILITARY PROGRESS; NAVAL PROGRESS.**

WAR, U.S. DEPARTMENT OF. Harry H. Woodring of Kansas was Secretary of War during 1939 and Gen. Malin Craig was Chief of Staff until July, when he was succeeded by Brig. Gen.

George C. Marshall. On July 1, 1939, the Department's Bureau of Insular Affairs was transferred to the Department of the Interior. See **AERONAUTICS; MILITARY PROGRESS** and the separate article on **ENGINEERS, CORPS OF**. For expenditures, see the table under **PUBLIC FINANCE**.

WAR DEBTS. See **REPARATIONS AND WAR DEBTS.**

WAR FINANCES. See **FINANCIAL REVIEW; INTERNATIONAL BANKING.**

WAR RELIEF IN THE U.S. The outbreak of war in Europe in September, 1939, set in motion a number of endeavors in the United States aimed at the collection of funds to relieve human suffering in the countries involved. Under the neutrality legislation of the United States (see **NEUTRALITY**), persons and organizations wishing to solicit such funds register with the Secretary of State, who reported that there had been 242 registrations by Jan. 9, 1940. During the four months, September through December, 1939, \$1,756,608 was collected (in addition to contributions other than money valued at \$286,120) and \$934,614 was spent for relief in the various belligerent countries or for refugees therefrom. On December 31, the unexpended balance of these organizations was reported at \$731,836. A list of the organizations which collected \$20,000 or more between the date of their registration and the close of the year is given in the table at the bottom of the page. Figures do not include relief in Spain, China, and Finland. The drive for Finnish relief funds, started December 8, was headed by Herbert Hoover. By the end of 1939, 2500 local committees were co-operating and \$300,000 had been sent to Finland.

WARSAW, FALL OF. See **EUROPEAN WAR.**

WASHBURN COLLEGE. A college of Liberal Arts with professional schools of law and music. Founded in 1865. Enrollment for the autumn session of 1939 was: Liberal arts and fine arts, 592; law, 104; music, 157. The faculty numbered 45 full-time and 24 part-time. The endowment was \$1,132,486 and the plant assets \$1,632,701. The general library contained 36,600 volumes and the law library, 15,052 volumes. President, Philip C. King, A.M., D.D.

WASHINGTON. Area and Population. Area, 69,127 square miles, exclusive of State's waters in Gulf of Georgia and Strait of Juan de Fuca, but including (1930) other water, 2291 square miles. Population: Apr. 1, 1930 (census), 1,563,396; July 1, 1937 (Federal estimate), 1,658,000; 1920 (census), 1,356,621. Seattle had (1930) 365,583; Spokane, 115,514; Tacoma, 106,817; Olympia, the capital, 11,733.

U.S. CONTRIBUTIONS FOR RELIEF IN BELLIGERENT COUNTRIES

<i>Name of organization, city, date of registration, and country or countries to which contributions are being sent</i>	<i>Funds received</i>	<i>Expenditures for relief in countries named</i>	<i>Funds spent for administration, publicity, affairs, campaigns, etc.</i>
American Field Service, N. Y. (France).....	\$ 30,899.32	\$ None	\$ 702.82
American Friends of France, Inc., N. Y. (France).....	40,571.03	34,861.34	888.65
American Friends Service Committee, Phila., Pa. (United Kingdom, Poland, Germany, and France).....	24,587.34	23,013.63	1,573.71
American Society for British Medical and Civilian Aid, Inc., N. Y. (Great Britain and France).....	88,906.00	None	1,439.28
American Society for French Medical and Civilian Aid, Inc., N. Y. (France).....	71,184.04	29,180.00	1,255.68
Commission for Polish Relief, Inc., N. Y. (Poland).....	55,462.34	53,254.34	16,345.62
Foster Parents' Plan for War Children, Inc., N. Y. (France).....	33,960.62	13,828.60	6,479.69
Hadassah, Inc., N. Y. (Palestine).....	422,483.83	214,985.11	7,502.01
Nowy Swiat Publishing Co., N. Y. (Poland and France).....	22,246.77	20,534.72	16.60
Le Paquet au Front, N. Y. (France).....	35,790.28	27,494.97	8,071.69
Polish American Council, Chicago, Ill. (Poland).....	91,722.01	30,875.35	812.51
Polish National Alliance of the U. S. of North America, Chicago, Ill. (Poland).....	202,442.57	181,065.00	None
Polish Relief Committee of Phila. and vicinity, Phila., Pa. (Poland).....	20,713.74	10,000.00	251.12
Polish Relief Fund, Detroit, Mich. (Poland).....	75,995.35	45,462.03	214.20
Polish Relief Fund, Jersey City, N. J. (Poland).....	21,963.42	7,544.25	550.23
Spanish Refugee Relief Campaign, N. Y. (France).....	20,307.42	3,282.41	14,358.18

Agriculture. Washington harvested, in 1939, 3,414,200 acres of the principal crops. Wheat, products of the orchard, and tame hay brought the greater part of the return on culture of the land. Wheat, on 1,901,000 acres, made 43,822,000 bu. (\$28,484,000, estimated value to the farmer); apples gathered for market totaled 19,500,000 bu. (\$13,650,000); pears, 5,779,000 bu. (\$3,114,000); tame hay, on 989,000 acres, gave 1,891,000 tons (\$16,452,000). Other crops of importance were: Potatoes, 42,000 acres, 7,350,000 bu. (\$4,410,000); dry peas, 101,000 acres, 1,919,000 bu. (\$2,783,000); oats, 229,000 acres, 11,221,000 bu. (\$3,927,000); hops, 4900 acres, 9,212,000 lb. (\$1,886,000).

Manufacturing. The U.S. Census of Manufactures' biennial report on Washington, issued in 1939, summarized the activity of the year 1937 in the totals that follow (with those for 1935 appended in parenthesis): Active manufacturing establishments numbered 3057 (2840), employed 101,260 wage-earners (79,589), and paid them \$128,471,946 (\$83,969,592); the aggregate of all factories' output was \$675,639,592 (\$470,112,615), and to that sum, the processes of manufacture contributed \$295,318,702 (\$201,178,804). Two branches of industry, connected with products of the forest and with those of the farm, provided, together, two-fifths of the year's output. Chief of the forest-fed manufactures, lumber and timber products employed 48,615 wage-earners for \$62,179,010 and totaled \$186,201,508 in output, for 1937; pulp (made from wood), a separate classification in the forest group, attained \$48,811,890; paper made in great part, at least, from wood-pulp, amounted to \$37,048,031; the planing mills produced \$19,507,717. Agricultural manufactures, nourished by the farm or nourishing it, included: flour and other output of grain mills, \$31,774,606; meat-packing, amounting to \$28,175,069; canned and other preparations of fruits and vegetables, \$24,669,198; feeds, \$18,252,054; condensed and evaporated milk, \$4,967,206; and cheese, \$1,103,028. The sea-sustained industries provided canned fish and shell-fish amounting to \$6,550,710, and shipyards' output of \$5,771,576.

Seattle's manufactured products attained, for 1937, \$152,454,694; those of Tacoma came to \$119,522,347; Spokane's, to \$43,210,825.

Mineral Production. According to report published by the U.S. Bureau of Mines in 1939 the value of Washington's yearly production of its native minerals attained \$26,658,257 for 1937. Sand and gravel, coal, cement, and stone, in the order here given, ranked foremost among the mineral products, as to value of output. Gold and clay products, less important, contributed over \$1,000,000 each. The mines' production of coal, 2,001,449 net tons (value, \$6,325,000) for 1937, dropped to a total of about 1,565,000 tons for 1938.

The mining industry reported a production of recoverable gold, silver, copper, lead, and zinc in Washington aggregating about \$6,668,700 in value for 1939, as against \$5,510,440 for 1938. The higher aggregate was attributed mainly to the regular operation, except for two summer months, of the Howe Sound Company's Holden mine, producing gold, copper, and silver. The yearly production of gold increased to 89,300 oz. (1939) from 74,175 (1938); by value, to \$3,125,500, from \$2,596,125. That of copper, to 17,864,000 lb., approximately, (1939), from 12,034,000 (1938); by value, to \$1,857,856, from \$1,179,332. That of silver attained \$300,160 for

1939; that of lead, \$353,700. The output of zinc diminished to 19,462,000 lb. (1939), from 22,804,000 (1938); by value, to \$1,031,486, from \$1,094,592.

Legislation. The regular biennial legislative session, which met in January, adjourned March 12. Its appropriations, including those for poor-relief, exceeded those for the previous two years by about \$7,000,000. Changes made in the State's system of taxation included selective sales taxes, rates on alcoholic beverages, and licenses for motor vehicles. See **HORTICULTURE**.

Education. The public schools of Washington reported, for the academic year 1938-39, pupils' enrollments to the number of 334,511; this comprised 228,454 in elementary study and 106,057 in high schools. There were, in addition, 900 enrollments in evening elementary schools and 22,138 in evening secondary schools. The year's expenditures for public-school education were: current, \$28,698,568; capital, \$931,062. The 10,682 teachers received pay averaging \$1606.91.

Political and Other Events. In August, when the Federally operated works at the Bonneville Dam on the Columbia River began the sale of electrical current, a movement for setting up public bodies that would take such current from the Government and distribute it to individual consumers was in full progress. Up to the beginning of August, people in various localities had formed 25 such groups, under the name of People's Utility districts. Some of the number had started efforts to obtain the property of local electric companies by condemnation or otherwise. Their spokesmen held out hopes of reductions of 60 per cent in the existing rates of charges for electricity.

An earthquake felt November 14, along the Pacific coastal slope from Portland, Ore., to Vancouver, B. C., attained at Tacoma sufficient violence to cast down a 250-lb. mass of wall from the sixth floor of the National Bank of Washington and to break an electric wire carrying current at high voltage over the flats near the city.

Officers. Washington's chief officers, serving in 1939, were: Governor, Clarence D. Martin (Dem.); Lieutenant-Governor, Victor A. Meyers; Secretary of State, Belle Reeves; Auditor, Cliff Yelle; Treasurer, Phil H. Gallagher; Attorney-General, G. W. Hamilton; Director of Education, Stanley F. Atwood.

WASHINGTON, THE STATE COLLEGE OF. A coeducational institution for higher learning at Pullman, Wash., founded in 1890. The enrollment for the autumn of 1939 was 4015. The 1939 summer session had an attendance of 794. Number of members in the faculty, autumn of 1939, was 245. The land-grant endowment Mar. 31, 1939, was \$4,182,778. The income for the school year 1938-39 was \$2,148,534. The library contains 400,000 volumes. President, Ernest O. Holland.

WASHINGTON, UNIVERSITY OF. A State institution of higher education in Seattle, Wash., founded in 1861. The enrollment for the autumn of 1939 was 10,662. The summer session had an attendance of 3720. There were 463 members on the faculty (not including 400 teaching fellows, graduate, and undergraduate assistants, etc.) during the autumn of 1939. For the biennium 1939-41 the estimated amount of endowment and income combined was \$6,588,490 (comprising all estimated receipts including building funds). The University library contains 352,330 volumes and the Law library 85,534. President, Lee Paul Sieg, Ph.D.

WASHINGTON AND JEFFERSON COLLEGE. An institution for the higher education of men in Washington, Pa., which had its origin in the Washington Academy, founded in 1780 and chartered in 1787. The enrollment for the fall semester of 1939-40 totaled 558 undergraduates and 15 graduate students. The faculty numbered 44. The productive funds of the college amounted to \$1,754,235, and the income from all sources was approximately \$293,225. The library contained over 57,415 volumes. A campaign for \$350,000 to erect a new chemistry building was successfully completed during fall and spring 1938-39; a new dormitory accommodating 21 students is to be opened in 1940. President, Ralph Cooper Hutchison, Ph.D., D.D.

WASHINGTON AND LEE UNIVERSITY. A nonsectarian institution for the higher education of men, in Lexington, Va., founded in 1749. The enrollment for the autumn of 1939 was 936. There were 60 members on the faculty. The productive funds of the university amounted to \$3,166,632, and the income for the year was \$372,704. The number of volumes in the library was approximately 105,000. President, Francis Pendleton Gaines, Ph.D.

WASHINGTON UNIVERSITY. An institution of higher learning for men and women, in St. Louis, Mo., founded in 1853. For the fall semester of 1939-40, the enrollment was 7203; for the summer session of 1939, 1224. Faculty, including emeriti and those on leave of absence, numbered 656. Mary Institute, a preparatory school for girls operated under the charter of Washington University, had an enrollment of 316 as of Nov. 1, 1939. Funds under the control of the University totaled \$33,815,953 as of June 30, 1939, including current funds, \$800,990, and endowment funds, \$18,519,558. Total expenditures during the budget year 1938-39 were \$2,664,555. Gifts reported at the June 1939 convocation totaled \$479,436, including additions to endowments of \$162,176. The libraries contained 399,819 volumes. In August of 1939 the University received a grant of \$60,000 from the Rockefeller Foundation for the construction of a large cyclotron for the disintegration of the atomic nucleus and the production of artificial radioactive substances. Chancellor, George R. Throop, Ph.D., LL.D.

WATER PEACE PRIZE. See PEACE.

WATERBURY TRIALS. See CONNECTICUT.

WATER POWER. See ELECTRIC LIGHT AND POWER; POWER PLANTS.

WATERWAYS. See CANALS; ENGINEERS, CORPS OF; FAIRS AND EXPOSITIONS; and the section on *Transportation* under countries having important waterways, notably BELGIUM and GERMANY.

WATERWORKS AND WATER PURIFICATION. Two-thirds of the population of the United States is served by 12,750 waterworks systems delivering water to 13,293 cities, towns, and villages, according to data supplied by the sanitary engineers of the 48 States to *Engineering News-Record*. The population supplied, using 1930 census figures because estimates of growth would be unreliable, is 81,243,000. Seventy-three per cent of the waterworks systems were publicly owned and served 83 per cent of the population supplied. In number of works, New York and Pennsylvania lead with 772 and 661 plants respectively, serving populations of 11.6 and 8.14 millions. About two-thirds of the works supply ground water and

only a third surface water, but if corresponding populations were available they would show surface waters preponderating, since all the great cities are supplied from streams or lakes and, broadly, ground waters are served in small cities, the most notable exceptions being Houston and San Antonio, Texas, Memphis, Tenn., and Dayton, Ohio. Treatment of some kind is applied to the water supply of about 67 million or 85 per cent of the population supplied with water. This ranges in degree from complete treatment by filtration and disinfection to the latter only. Of 2188 filtration plants only 97 employ slow sand against 2081 using rapid or mechanical filters. Disinfection, almost wholly by means of chlorine, was employed by 4054 works. Iron removal was practiced at 398 and removal of manganese at 19, some of the latter being combined with iron removal. Aeration and filtration was generally used for deferization and demanganation. Taste and odor control, little used until recent years, was employed by 1187 works, 551 using ammonia and 636 activated carbon, either alone or together. Of 526 water-softening plants, 398 added lime or lime and soda ash to the water before filtration and 128 used zeolite as a reagent, restoring the softening power of the zeolite filters by passing common brine through them. (For details by states, see *Engineering News-Record*, Sept. 28, 1939; and for review of growth of American waterworks in number since 1800, see same journal, Nov. 9, 1939.)

Good progress is being made on large additions to the water supplies of Boston and vicinity, New York City, and Los Angeles and near-by cities in California. The Boston Metropolitan District, already supplied with surface water from relatively near sources, is diverting water from tributaries of the Connecticut. The Winsor dam, which is the main dam forming the Quabbin reservoir, was nearly completed at the close of the year. It is the second and last of two hydraulic-fill earth dams that will store water of the Swift River for diversion eastward to the existing storage and aqueduct systems. Filling the reservoir has been started, but not until the spring rains will the stored water be high enough to deliver water into the Quabbin aqueduct tunnel. This tunnel is 25 miles long. It is unique in that it can be used to carry water eastward from the Quabbin reservoir to the Ware River or to carry flood waters of that stream westward for storage in the Quabbin reservoir. A pressure aqueduct 18 miles long is under construction to deliver water from the Wachusett reservoir to the existing aqueduct system leading to the Metropolitan District. The pressure aqueduct will eliminate pumping by delivering water at a higher level than the existing aqueduct and will replace open channels liable to contamination from surface water. Except for a three-mile tunnel under Sudbury reservoir, the aqueduct will be built of large precast steel-cylinder-concrete pipe laid for 15 miles in cut and cover. It will deliver water into a terminal equalizing basin, 273 ft. above mean low tide. Ultimately, a rock-tunnel distributing loop encircling the district will be constructed. (For description of pressure aqueduct, see *Engineering News-Record*, Aug. 31, 1939.)

On the Delaware River project to bring an additional supply of water to New York City, about 27 miles of the 85-mile aqueduct tunnel had been completed on November 1. Contracts for the remainder and for the Rondout reservoir

at Lackawack, N. Y., had been let. This and other contract awards totalled \$171,000,000 of a total estimated cost of \$228,000,000.

Across the continent, the Metropolitan Water District of Southern California began delivering water through the Colorado aqueduct into the Cajalco terminal reservoir on November 19. The aqueduct is 242 miles long. Water from the Colorado River is pumped and repumped six times, the total lift being 1,617 ft. Service to Los Angeles and the 12 other cities in the district will not begin for a year. A contract was let in November for a water-softening and filtering plant with a capacity of 100-million gallons a day which will be quadrupled later. The aqueduct is designed for the delivery of a billion gallons a day, when needed, all of which will be softened and filtered. At the start, softening will be effected by the lime-zeolite process, but if desired the time-honored lime-soda ash process can be substituted.

Great Lakes cities continued to improve their water supplies. Milwaukee put a 200-million gallon purification plant into use in June. Novel features are two-story coagulation and sedimentation basins to save space on a site reclaimed from the lake and jet surface wash for the filters. Chicago is building a 320-million gallon purification plant for its Southwestern district as a one-third start toward purifying its entire supply. The 38-acre site for the Southwest plant is being reclaimed from Lake Michigan, as also 115 acres for a park and beach. Raw- and filtered-water tunnels, connecting with existing lake intake and land distributing tunnels are under construction. A contract has been let for the substructure of a chemical building and for mixing and settling tanks. As at Milwaukee, two-story basins for sedimentation and jets for surface washing of the filters will be used. (For detailed illustrated description by City Engineer Gayton, see *Engineering News-Record*, Nov. 23, 1939.) Toledo, Ohio, Sandusky, Ohio, and Grand Rapids, Mich., are also going to the Great Lakes for water. Other cities have recently done so or have it in mind. By this action hard and polluted river water or hard water from wells, some of the latter containing iron, manganese, and hydrogen sulphide, will be replaced by softer and less polluted lake water.

At Minneapolis the new 120-million gallon softening plant includes 12 Spaulding precipitators for use in the lime process. The city of Wichita is building a water-softening, iron- and manganese-removal plant to treat water from 25 wells scattered over an area of eight miles near the Arkansas River 35 miles north of the city. Electric-driven deep-well centrifugal pumps will deliver the water into a 48-in. pipe line leading to the treatment plant adjacent to the high service pumping station of the Wichita Water Co. The city will sell the water to the company for distribution. Brookline, Mass., has built a spheroidal water tank with a flat bottom resting on a concrete base. The maximum diameter of the tank is 90 ft. and its maximum height is 47 ft. Its capacity is 1.65 million gallons. It is built from copper-bearing steel plates, with arc-welded joints. In striking contrast, Batavia, N. Y., has constructed a tank supported on tall steel columns. The tank is 103 ft. in diameter, has a water depth of 25 ft., and a capacity of 1½ million gallons. The high-water line is 169 ft. above the ground. In Canada, the existing large filter plants

at Toronto will soon be supplemented by a third.
M. N. BAKER.

WAZIRISTAN. See **AFGHANISTAN AND INDIA** under *History*.

WEATHER. See **METEOROLOGY**.

WEEVILS. See **ENTOMOLOGY, ECONOMIC**.

WELDING. See **ELECTRICAL INDUSTRIES**.

WELFARE WORK. See **COMMUNITY CHESTS AND COUNCILS**; articles on churches and on foundations such as **ROCKEFELLER FOUNDATION**; also, **SOCIAL WORKERS, AMERICAN ASSOCIATION FOR**. For government activities see **RELIEF**.

WELLESLEY COLLEGE. A nonsectarian institution for the higher education of women in Wellesley, Mass., chartered in 1870. The enrollment for the academic year 1939-40 was 1512. The teaching staff numbered about 200. Permanent endowment funds for 1938-39 amounted to \$8,972,218. The income was \$1,191,073. The library contained over 189,000 volumes. President, Mildred H. McAfee, LL.D., L.H.D.

WELLS COLLEGE. An institution of higher learning for women in Aurora, N. Y., founded in 1868. The enrollment for the autumn of 1939 was 304 boarders and 3 day students. The faculty numbered 48 active members and 7 Emeriti. The endowment amounted to \$1,480,818, and the income for the year from invested funds, tuition, etc., was \$457,262. There were 88,266 volumes in the library and 369 current periodicals. President, W. Ernest Weld, Ph.D., LL.D.

WESLEYAN UNIVERSITY. A college of liberal arts for men located at Middletown, Conn., founded in 1831. The 1939 autumn enrollment was 761; 734 undergraduate and 27 graduate students. The faculty numbered 79 active members plus four Teaching Fellows. The productive funds of the University on June 30, 1939 amounted to about \$8,000,000, and the plant funds to about \$5,500,000. The total income for the year was about \$865,000. Gifts during the year amounted to \$452,144. Chief among these were \$147,000, residue from the William F. Armstrong Estate, \$93,000 from the Estate of Charles L. Denison, and \$75,000 from the Carnegie Corporation for an extension of the Library. The library contained about 241,000 accessioned volumes. President, James L. McConaughy, Ph.D., L.H.D., LL.D. See **PRINTS**; **SEISMOLOGY**.

WESTERN AUSTRALIA. An Australian State. Area, 975,920 square miles; population, exclusive of full-blood aboriginals, 463,880 (Mar. 31, 1939, estimate), compared with 438,852 (1933 census). During 1938 there were 9141 births (19.87 per 1000); 4234 deaths (9.20 per 1000); 4153 marriages (9.03 per 1000). The principal cities are Perth (capital) with 220,330 inhabitants on Dec. 31, 1938, including Freemantle (26,191 on Oct. 31, 1937) and other suburbs; Subiaco, 17,850 (1937); Kalgoorlie, 10,650 (1937); Claremont, 6750 (1937); and Boulder, 6600 (1937).

Production. Wheat (36,711,000 bu. in 1938-39 season), oats, barley, hay, wine, raisins, apples, and potatoes are the main agricultural products. There were 9,165,000 sheep in the State in 1938. Other livestock (1937): 740,241 cattle; 151,067 horses; 64,598 swine. The principal dairy products for 1937-38 were butter, 15,373,334 lb.; cheese, 885,418 lb.; bacon and ham, 4,010,446 lb. Wool (greasy) produced during 1938 totaled 70,684,855 lb.

The estimated value of mineral production for

1938 was £A10,830,006 of which gold accounted for £A10,286,349. In 1937-38, from the 2066 factories, with 23,133 employees (including working proprietors), the net value of production was £A8,562,294 (Australian £ averaged \$3.8955 in 1938 and \$3.9394 in 1937).

Government. For the year ended June 30, 1939, revenue totaled £A10,950,000; expenditure, £A11,170,000; public debt, £A95,473,000. Executive authority is vested in a governor, assisted by an executive council of responsible ministers. Parliament consists of a legislative council of 30 members elected for six years and a legislative assembly of 50 members elected for three years by universal adult suffrage. Governor (vacant); Lieutenant-Governor, Sir James Mitchell (July, 1933); Premier, John Collings Willcock. See AUSTRALIA.

WESTERN FRONT. See EUROPEAN WAR; FRANCE, GERMANY, and GREAT BRITAIN under *History*.

WESTERN RESERVE UNIVERSITY. A nonsectarian institution for the higher education of men and women in Cleveland, Ohio, chartered in 1826. There were enrolled in the 13 colleges and schools in 1939, 3297 full-time students and 7165 part-time students. The summer session (1939) had an attendance of 2120. The faculty numbered 749. The endowment was \$14,131,414, and the income for 1938-39, \$2,550,165. The library contained 510,000 volumes. The President was Winfred George Leutner, Ph.D., LL.D.

WESTERN SAHARA (SPANISH). See SPANISH WEST AFRICA.

WESTERN SAMOA. See SAMOA.

WEST SIBERIAN TERRITORY. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

WEST VIRGINIA. Area and Population. Area, 24,170 square miles; included (1930) water, 148 square miles. Population: Apr. 1, 1930 (census), 1,729,205; July 1, 1937 (Federal estimate), 1,865,000; 1920 (census), 1,463,701. Charleston, the capital, had (1930) 60,408 inhabitants; Huntington, 75,572; Wheeling, 61,659.

Agriculture. Farmers in West Virginia harvested, in 1939, 1,498,000 acres in principal crops. Corn, on 491,000 acres, gave 13,994,000 bu. (estimated value on the farm, \$10,076,000); tame hay, on 708,000 acres, 718,000 tons (\$7,683,000); wheat, 145,000 acres, 2,102,000 bu. (\$1,829,000); potatoes, 32,000 acres, 3,040,000 bu. (\$2,736,000). Apples gathered for market came to 4,000,000 bu. (\$2,400,000).

Manufacturing. The U.S. Census of Manufactures' biennial report on West Virginia, issued in 1939, showed for 1937 the totals that follow (with those for 1935 appended in parenthesis): Active manufacturing establishments numbered 1057 (1027), employed 83,464 wage-earners (74,180), and paid them \$102,511,473 (\$76,649,944); output of all factories aggregated \$480,526,030 (\$366,574,067), to which sum the manufacturing processes contributed \$222,774,418 in value (\$167,754,022). As to particular industries, their totals in some cases were not separately divulged; thus nearly one-half of the manufacture of the State remained unclassified. Among the manufactured totals that were stated according to industrial classification, the production of miscellaneous chemicals attained \$58,267,326; that of glass, \$52,954,985; pottery, \$13,554,916. The so-called Wheeling industrial area manufactured goods amounting to \$332,670,971, or nearly seven-tenths of the total for the State; but only a minor part

of this amount was attributable to Wheeling itself, for which city the exact total was not stated.

Mineral Production. The yearly production of native minerals of West Virginia amounted, for 1937, to \$306,660,947; coal supplied over two-thirds of this; natural gas, nearly one-sixth. The reduced industrial activity of late 1937 and of 1938 affected the mining of bituminous coal; output fell to 92,922,000 tons, approximately, for 1938, from 118,646,343 for 1937 (value, \$223,055,000). The output of bituminous coal for 1937 exceeded that of Pennsylvania in quantity, though not in value, and was the greatest for any State of the Union; the coal mines employed 113,643 persons in 1937 for an average of 209 days. The quantity of natural gas taken from wells was about 150 billion cu. ft. for 1938, as against 149,084 million (value, \$19,306,000 at the wells and \$58,639,000 where consumed) for 1937. Drilling into the Oriskany sand formation brought 120 new wells into production in Kanawha County, having a combined initial open flow of 1049 million cu. ft. a day. The production of petroleum continued a slow decline that had proceeded with little interruption for 20 years; the yearly output fell to some 3,684,000 barrels for 1938, from 3,845,000 for 1937; as virtually all was Pennsylvania-grade, the relatively high prices brought \$8,800,000 for the output of 1937. Gasoline taken from natural gas attained for 1937 the value of \$2,528,000. Clay products (exclusive of pottery and refractories, in the U.S. Bureau of Mines totalization of 1939, dealing with the production of 1937) amounted to \$2,745,183.

Apart from the production of native minerals there was a substantial industry in the treatment of minerals mainly from other States. Out of coal originating chiefly in Pennsylvania were made 1,513,888 net tons of coke in 1938 and 2,097,380 tons (value, \$7,054,186) in 1937. Blast furnaces' shipments of pig iron totaled 496,905 gross tons for 1938; for 1937, 685,086 tons.

Education. West Virginia's inhabitants of school age (from 6 years to 20) were reported, for the academic year 1938-39 at 536,804. Enrollments of pupils in public schools numbered 450,754; this comprised 318,286 in elementary study and 132,468 in high schools. Private and parochial schools reported an additional enrollment of 4239. The year's expenditure for public-school education totaled \$25,720,340. It included salaries for the 16,173 teachers, at an average of \$1132.51.

Legislation. The regular biennial session of the Legislature voted the State's ratification of the Interstate Anti-Pollution Compact, in which States in the basin of the Ohio River were to unite on methods for checking its pollution.

Political and Other Events. The great coal-mining industry of West Virginia was interrupted and disturbed, in April and May, by the strike of the United Mine Workers in the Appalachian field. The State Welfare Agency denied to striking miners and their families the benefit of public support from the funds for poor-relief. Late in May the Agency declined a Federal offer of food from the Federal Surplus Commodities Corporation, saying that no additional supplies of food would be required on account of the strike; this drew forth a charge, attributed to a spokesman for the C.I.O., that Governor Holt wanted to break the strike in four counties of West Virginia by refusing food to 3500 miners' families.

Officers. West Virginia's chief officers, serv-

ing in 1939, were: Governor, Homer A. Holt (Dem.); Secretary of State, William S. O'Brien; Treasurer, Richard E. Talbott; Auditor, Edgar B. Sims; Attorney-General, Clarence W. Meadows; Commissioner of Agriculture, J. B. McLaughlin; Superintendent of Schools, W. W. Trent.

WEST VIRGINIA UNIVERSITY. An institution for the higher education of men and women maintained by the State of West Virginia at Morgantown, founded in 1867. The 1939 summer session had an attendance of 1234. In the autumn of 1939 the enrollment was 3245. The faculty numbered 267. The library contained 185,000 volumes. The total income for 1938-39 was \$2,428,380. Charles Elmer Lawall, E.M., M.S., LL.D., President, inducted July 1, 1939.

WHEAT. Wheat production in the United States in 1939 was estimated at 754,971,000 bu., about 19 per cent smaller than the 1938 crop of 931,702,000 bu. and slightly above the 1928-37 average of 752,952,000 bu. The total area harvested in 1939, 53,696,000 acres, compared with 69,869,000 acres in 1938 and the 10-year average of 55,804,000 acres. Decline in acreage was attributed to lower prices for the 1938 crop and AAA allotments for 1939. Acreages harvested, average acre yield, and total production, respectively, were for winter wheat 37,802,000 acres, 14.9 bu., 563,431,000 bu.; durum 3,066,000 acres, 11.2 bu., 34,360,000 bu.; and other spring wheat, 12,828,000 acres, 12.3 bu., 157,180,000 bu. States leading in winter wheat production included Kansas 111,619,000 bu., Oklahoma 60,438,000, Illinois 38,409,000, Ohio 37,070,000, Nebraska 35,432,000, Washington 30,218,000, Missouri 29,205,000 and Texas 27,650,000 bu. Spring wheat production in leading States was in North Dakota 84,062,000 bu., Montana 34,628,000, Minnesota 19,588,000, South Dakota 18,512,000, and Washington 13,604,000 bu. Of the durum crop, 27,918,000 bu. were harvested in North Dakota, 5,484,000 in South Dakota, and 958,000 bu. in Minnesota. The season average price per bushel received by farmers was 67.6¢ and the value of production was estimated at \$510,667,000, compared with 56.1¢ and \$522,639,000 in 1938. Growers keeping within acreage allotments under the Agricultural Adjustment Act of 1938 and securing loans on their 1939 crop averaging 64¢ per bushel also received conservation and parity payments adding to 28¢ per bushel making a total average per-bushel return of at least 92¢ to co-operating producers. World wheat supplies, excluding the U.S.S.R. and China, for the year beginning July 1, 1939, were indicated in late December to be about 255,000,000 bu. more than in the year before, and world stocks of old wheat on July 1, estimated at about 1,190,000,000 bu., were about 590,000,000 bu. more than in 1938. World wheat production was estimated at 4,252,000,000 bu., about 335,000,000 bu. below the record production of 1938. See *Crop Production Table* under AGRICULTURE; AGRICULTURAL ADJUSTMENT ADMINISTRATION; COMMODITY CREDIT CORPORATION; FARM CREDIT ADMINISTRATION; FEDERAL CROP INSURANCE CORPORATION; FEDERAL SURPLUS COMMODITIES CORPORATION; IMPORTS AND EXPORTS; AUSTRALIA and CANADA under *History*.

HENRY M. STEECE

WHITE RUSSIAN SOVIET SOCIALIST REPUBLIC. One of the 11 constituent republics of the U.S.S.R., bordering on Poland and Lithuania. Area, 48,960 square miles; popula-

tion (1939 census), 5,967,976. Chief cities (with 1936 populations): Minsk (capital), 198,000; Vitebsk, 143,000; Gomel, 139,500. Education (1938): 1,000,000 students in elementary schools and 47,600 students in schools for higher education and technical colleges.

Production, etc. Flax, hemp, and potatoes are the principal agricultural crops. By Dec. 31, 1937 some 97 per cent of the peasant farms had been collectivized. There were 8672 tractors and 1236 harvester combines working in the fields in 1938. Industrial production for 1937 was valued at 2100 million rubles (nominal value of ruble, \$0.20). The output of peat for 1937 amounted to 2,500,000 tons. Peat is used as fuel in the electric power stations (which produced 421.4 million kilowatt-hours during 1937), as a fertilizer, and as a raw product in the chemical industry. The budget for 1938 was 1,167,000,000 rubles. See *POLAND* under *History*; *UNION OF SOVIET SOCIALIST REPUBLICS*.

WHITESTONE BRIDGE. See *BRIDGES*.

WHITNEY MUSEUM OF ART. See *ART MUSEUMS*.

WILDLIFE. See *BIOLOGICAL SURVEY*; *FISH-ERIES, BUREAU OF*.

WILLIAM AND MARY, COLLEGE OF. An institution for the higher education of men and women at Williamsburg, Va., founded in 1693. The enrollment for the autumn of 1939 was 1255. The 1939 summer session had an attendance of 492 students. The faculty numbered 96 at the College, 20 in the Norfolk Division, and 25 in the Richmond Division. The endowment for the year was \$1,321,952, and the income, exclusive of gifts, was \$1,011,167. The library contains 140,000 volumes. President, John Stewart Bryan, Litt.D.

WILLIAMS COLLEGE. A nonsectarian college for men in Williamstown, Mass., founded in 1793. The enrollment for the autumn of 1939 totaled 825. There were 88 members of the faculty. On June 30, 1939, the endowment amounted to \$10,836,304, and the gross income from all sources for the same period amounted to \$869,146. The library contained 171,403 volumes. President, James Phinney Baxter, 3d, Ph.D., LL.D.

WILSON, CLARENCE TRUE. An American Methodist Episcopal clergyman and prohibitionist, died in Portland, Ore., Feb. 16, 1939. Born in Milton, Del., Apr. 24, 1872, he was educated at St. John's College, Annapolis, the University of Southern California (A.B., 1894), and McClay College of Theology (B.D., 1895). Attracted to a clerical career and to the temperance movement as a youth, he held his first pastorate in Seaford, Del., when but 17. After graduation from St. John's he served at Sea Cliff, L. I., until 1894, and in 1895 he was appointed to a church in Pasadena, Calif. His work in the temperance movement led to his nomination for Congress by the Prohibition Party in 1896. Thereafter he held pastorates at San Diego (1898-1901), Newark, N. J. (1901-05), and Portland, Ore. (1905-10).

After his appointment to Portland, he became president of the Oregon Anti-Saloon League, and in 1910 was appointed national secretary of the Temperance Society of the Methodist Episcopal Church in Washington. The name was changed to the Board of Temperance, Prohibition, and Morals in 1916, and Dr. Wilson was named general secretary, a post which he held until 1936 when he was retired because of illness as secretary emeritus. A tireless worker for prohibition, he was the originator of the project for the Methodist Building in Washington, was joint editor of

The Voice and Clip Sheet, and served as vice president of the National Conference of Organizations Supporting the 18th Amendment (1928) and of the International Reform Federation (1929).

He wrote extensively on the prohibition movement and published, among other books, a *Pocket Cyclopaedia of Temperance* (1915) and *The Life of Matthew Simpson, Patriot, Preacher, and Prophet*.

WILSON, EDMUND BEECHER. An American zoologist, died in New York, Mar. 3, 1939. Born in Geneva, Ill., Oct. 19, 1856, he was educated at Yale University (Ph.B., 1878) and at Johns Hopkins University (Ph.D., 1881), and during 1881-82 he studied at the universities of Cambridge and Leipzig. In 1883 he joined the faculty of Williams College as a lecturer on biology, and in the following year transferred to the Massachusetts Institute of Technology. He taught biology at Bryn Mawr from 1885 to 1891, and then joined Columbia University as adjunct professor of biology, founding the department of zoology, and serving successively as professor of invertebrate zoology (1894-97), professor of zoology (1897-1909), Da Costa professor of zoology (1909-28), and as emeritus professor in residence thereafter. He acted as dean of the faculty of pure science during 1905-06 and was a member of the University Council (1901-03, 1905-06, and 1913-15).

An eminent zoologist, his researches, particularly in embryology and cellular biology, attracted world wide attention, and in 1914 he was invited by the Royal Society to deliver the Croonian lecture in London. His title was "The Bearing of Cytological Research upon Heredity." His book, *The Cell in Development and Heredity* (1896; 3d ed., 1925), has been referred to as having, "perhaps influenced subsequent biological thought more than any book produced in this country," and in 1928 he received the Daniel Giraud Medal for 1925 of the National Academy of Sciences for this work.

Dr. Wilson's work, particularly in the development of American zoology, brought him many honors and honorary degrees, both American and foreign. He was awarded the Sears Medal of the Linnaean Society (1928) and the John J. Carty Medal (1936). He also held the presidency of such organizations as the American Association for the Advancement of Science (1904), the American Society of Naturalists (1900), American Society of Zoologists (1895), and the Society of Experimental Biology and Medicine (1905).

With W. T. Sedgwick, Dr. Wilson published *General Biology* (1887) and he wrote *Atlas of Karyokinesis and Fertilization* (1895) and *The Physical Basis of Life* (1923).

WINDWARD ISLANDS. A group of islands in the British West Indies comprising Grenada, St. Lucia, St. Vincent, the Grenadines, and (since Jan. 1, 1940) Dominica. Total area, including Dominica, 813 square miles; total population, 220,000. The seat of the government is at St. George's in Grenada. There is one governor for the islands but there is no common legislature and each island has its own institutions. Governor and Commander-in-Chief, Sir Henry Popham (appointed Jan. 19, 1937). See DOMINICA; GRENADA; ST. LUCIA; ST. VINCENT; JAMAICA; LEEWARD ISLANDS, BRITISH.

WINE. See ALCOHOLIC BEVERAGES.

WISCONSIN. Area and Population. Area, 56,066 square miles, exclusive of the State's part of the Great Lakes; included (1930) other water,

810 square miles. Population: Apr. 1, 1930 (census), 2,939,006; July 1, 1937 (Federal estimate), 2,926,000; 1920 (census), 2,632,067. Milwaukee (1930) had 578,249 inhabitants; Madison, the capital, 57,899.

Agriculture. Wisconsin's harvest of principal crops in 1939 covered 10,167,700 acres. Corn, on 2,233,000 acres, made 85,970,000 bu. (estimated value on the farm, \$45,564,000); tame hay, on 3,980,000 acres, 5,829,000 tons (\$43,718,000); oats, 2,185,000 acres, 71,012,000 bu. (\$22,724,000); barley, 779,000 acres, 22,591,000 bu. (\$11,973,000); potatoes, 197,000 acres, 17,336,000 bu. (\$9,535,000); tobacco, 22,300 acres, 31,406,000 lb. (\$3,669,000); wheat, 90,000 acres, 1,350,000 bu. (\$1,066,000); rye, 238,000 acres, 2,380,000 bu. (\$1,095,000).

Manufacturing. The U.S. Census of Manufactures' biennial report on Wisconsin, issued in 1939, showed for 1937 the totals that follow (with those for 1935 appended in parenthesis): Active manufacturing establishments numbered 6318 (6286), employed 234,067 wage-earners (196,972), and paid them \$296,365,346 (\$204,200,564); output of all factories aggregated \$1,772,310,417 (\$1,313,814,794), to which sum the processes of manufacture contributed \$709,824,233 in value (\$529,328,623). Of the classified industries, the production of agricultural implements, inclusive of tractors, made goods amounting to \$121,583,867, the highest stated individual total. The several industries preparing products of the farm for marketing and consumption, if taken together, would attain more than double this figure; they included meat-packing, which produced \$72,387,364; production of factory-made butter, \$63,932,363; that of condensed and of evaporated milk, \$57,354,882; manufacture of cheese, \$54,252,393; products of the grain mills, \$8,155,595; miscellaneous preparations of food, \$31,941,556; canned and other preparations of fruits and vegetables, \$26,468,263. The mechanical fabrications were important, including electrical machinery, etc., \$50,495,855; engines, turbines, water wheels, and windmills, \$33,776,587; pumps, \$4,145,695; refrigerators and refrigerating and ice-making apparatus, \$5,230,490; miscellaneous machinery, \$48,735,386. The output of paper amounted to \$97,933,957; that of bodies and parts for motor vehicles, to \$90,700,733. Breweries, some serving markets outside of the State, produced \$51,565,478 of malt liquors. Production of boots and shoes attained \$41,477,062.

Milwaukee had 76,505 manufacturing wage-earners in 1937; they received \$104,852,954; the manufactured products totaled \$504,545,670; the city accounted for about one-third of the manufacturing in the State. Racine's factories produced \$103,177,883.

Mineral Production. Native minerals of Wisconsin produced in 1937 attained the total value of \$15,228,024; Iron ore contributed over one-fourth of this total, stone nearly an equal amount; zinc was produced to a lesser amount. The production of iron ore came from two mines; over nine-tenths of it, from one of these. Their total of ore mined was 854,795 gross tons for 1938 and 1,155,602 tons for 1937. Their shipments of iron ore 625,378 gross tons for 1938, and 1,419,810 for 1937, in the one case fell short of production and in the other considerably exceeded it; the shipments, by value, totaled \$1,886,477 (1938) and \$4,473,942 (1937). The output of stone, chiefly of the coarser grades, ran to 3,097,230 short tons

(1938) and 3,331,670 tons (1937); by value, to \$3,880,935 and \$4,284,003. The total for 1938 included about \$1,000,000 in granite and limestone of finer grades, of which two-thirds was granite. The mining of zinc decreased to 2073 short tons of recoverable metal in ore (1938), from 6938 tons, value \$901,940, for 1937.

Legislation. Meeting in January, the regular biennial session of the Legislature brought into power a Republican majority, the first in eight years. This group had the help of the Democratic contingent in many of the measures that it passed. Governor Heil, taking office, recommended legislation reversing the course that the Progressive legislatures and administrations had taken while in power. The legislators were slow to improve the State's budgetary position, but they made haste to reorganize the State government and to amend the laws affecting labor unions.

Asserting a right of veto the session, almost at its outset, rejected executive reorganization that Governor La Follette had decreed by virtue of a grant of power made by the previous Legislature; thus 26 decrees, among them one creating the Department of Social Adjustment, were made void. Acts were passed killing the State's Department of Commerce (La Follette's device for regulating trade) by terminating its appropriation; abolishing the Wisconsin Development Authority, that had been created to carry out a State-supported enterprise to build works for the generation of electricity; and making an end of the Board of Regents of the University of Wisconsin, who had ousted Pres. Glenn Frank at the University in accordance with Governor La Follette's wish.

Legislation changing the regulation of labor disputes was embodied in two acts. The first of these redefined a labor dispute as a difference between an employer and the majority of his employees in any collective-bargaining unit; this definition intently restricted picketing to disputes as thus redefined, and in particular it ended the application of a ruling of the State Supreme Court that picketing was lawful in disputes over labor even though no direct issue between employer and employees had been raised; it thus tended to prevent resort to picketing where an outside union sought to use this method to gain as members employees not at odds with their employer. The second and more extensive modification of the State law on labor relations was an act abolishing the State Labor Relations Board; it set up a new board of three members with diminished powers, forbade employees' seizure of the employer's premises, allowed closed shops (those excluding non-unionists) only where 75 per cent of the employees in a unit had voted for one, required ten days' notice in advance of any strike affecting perishable products, and provided punishment for intimidation and violence in a labor dispute.

In connection with the law as to trading practices, the donation of trading stamps with sales of goods of fixed retail price was forbidden.

The session, in the hope of providing either economies or adequate taxes, was stubbornly prolonged until the middle of October. It eventually voted a tax on cigarettes at 2 cents a package, but increased the State's obligations by raising the full rate of old age assistance to \$40 a month, from \$30. Heil sought to veto the latter act in part, while allowing an accompanying section appropriating \$5,000,000 for two years' poor-aid to stand. The courts compelled the Secretary of State to

publish the whole bill as law, without prejudice to later contest as to its validity.

Political and Other Events. Governor Heil, who entered office in January, had the advantage of successful experience as a business man; a strongly Republican Legislature gave him and his political party the numerical strength to put through such reforms as they might judge wise; and Heil had been elected on the strength of his earnest proposals to reduce the scale to which the La Follette regime had carried public expenditure. Nevertheless the new administration failed to make the expected reductions. On the face of the figures the budget presented by La Follette for the years 1937-38 had totaled \$62,919,569; subsequent appropriations had raised the sum to \$70,723,988 (these being sums that covered, not all State expenditure, but the budgetable part, distinct from expenditures out of specially allotted revenue). Heil presented a budget calling for \$66,753,133, to apply to the fiscal years 1939 and 1940; subsequent appropriations brought the total to a reported \$79,919,857. As he had spoken in his pre-election campaign of reducing his predecessor's figures by \$15,000,000, he was taxed with not making good. He charged, on the other hand, that he had found the State, when he took office, to be facing obligations to pay out of its general fund \$39,141,000 of obligations, chiefly \$23,114,000 taken from the highway revenues, and that the general fund was virtually "bankrupt."

The failure of the legislative session, after sitting for seven months, to lay new taxes for more than a minor part of the deficit in prospective revenue left the State, in October, short by nearly \$22,000,000 of the sum expectedly needful for the two years' expenditures out of the general fund. Heil thereupon, after the adjournment, vetoed the appropriating clauses of a bill to raise old-age assistance to \$40 a month, thus cutting the deficit by \$2,535,000.

Wisconsin's experiment in setting prices, by authority of its Department of Agriculture, for milk at retail in the several chief centers of population met with difficulty early in 1939; the price was reduced for the Milwaukee area in March; in September the State dropped an action that it had brought against one of the farmers underselling the fixed prices. The question of the wisdom of the State's policy in heavily taxing wealthy people was brought up for public consideration by Chairman W. J. Conway of the Tax Commission; he reported an investigation in which he had listed 169 former residents of the State, each having an income of \$25,000 a year or more from investments, who had left to reside elsewhere, their departure costing the State about \$300,000 a year in loss of taxes and prospective loss of death dues running to millions.

The State's tax on cigarettes at two cents a package, the year's sole conspicuous addition to taxation, went into effect with September 20. It was expected to yield about \$2,700,000 a year.

Officers. Wisconsin's chief officers, serving in 1939, were: Governor, Julius P. Heil (Rep.); Lieutenant-Governor, Walter S. Goodland; Secretary of State, Fred R. Zimmerman; Treasurer, John M. Smith; Attorney-General, John E. Martin; State Superintendent of Schools, John Callahan.

WISCONSIN, THE UNIVERSITY OF. A State institution of higher education in Madison, Wis., founded in 1848. The enrollment for the autumn term of 1939 was 11,286. In the summer session

the enrollment was 4680. The faculty numbered 1698. The endowment as of June 30, 1939, was \$1,508,177, while the net income for 1938-39 was \$9,114,341. The library contained 1,100,000 volumes and more than 400,000 pamphlets. President, Clarence Addison Dykstra, B.A., LL.D., L.H.D.

WITTENBERG COLLEGE. A coeducational institution in Springfield, Ohio, founded in 1845, supported by synods of the United Lutheran Church. The number of students enrolled for the autumn term of 1939 was 1100, of which 573 were men and 527 were women. Of these, 846 (463 men and 383 women) were enrolled in the College of Liberal Arts. The Summer Session of 1939 had an enrollment of 400. The faculty numbers 77. The productive funds of the institution amounted to \$2,057,990, and the operating income for the year was \$421,080. The library contained 61,919 volumes. President, Rees Edgar Tulloss, Ph.D., D.D., LL.D.

WOMAN'S CHRISTIAN TEMPERANCE UNION, THE NATIONAL. A nonsectarian and all-partisan organization which has as its purpose the protection of the home and the abolition of the liquor traffic. Organized in 1874 it has an approximate membership of 600,000 in 10,000 local unions found not only in every state of the Union but in Alaska, Puerto Rico, Hawaii, and the Philippines. The annual convention of 1939, held in Rochester, New York, marked the observance of the one hundredth anniversary of the birth of Frances Willard. On September 28, two thousand of the convention delegates made a pilgrimage to the little town of Churchville where a brief ceremony was held with tributes paid by the Mayor and other representative people. That night at the Convention Dinner in Rochester, the president of the D.A.R., the National Council of Women, the Alpha Phi Fraternity, and other prominent organizations joined in acclaiming the life of this great woman. The climax was a nationwide broadcast by Senator Morris Sheppard and other members of Congress. The president and secretary of the National Woman's Christian Temperance Union are Mrs. Ida B. Wise Smith, 1730 Chicago Avenue, Evanston, Illinois, and Mrs. Anna Marden DeYo, 1730 Chicago Avenue, Evanston, Illinois. National Headquarters of the organization are at 1730 Chicago Avenue, Evanston, Illinois, and a legislative office is maintained at 100 Maryland Avenue, N.E., Washington, D. C.

WOMEN IN INDUSTRY. See LABOR CONDITIONS.

WOMEN'S BUREAU, THE. A Bureau in the U.S. Department of Labor, which by its organic act is charged with the formation of standards and policies which shall promote the welfare of wage-earning women, improve their working conditions, increase their efficiency, and advance their opportunities for profitable employment.

Since its inception in 1918, the Bureau has become the recognized source of information on the gainful employment of women: Their occupations, opportunities, and exploitation; health and welfare; wages, hours, and working conditions; trends of employment and earnings; income, cost of living, and responsibilities; economic and legal status; census and other data concerning them; legislation in their behalf; and the efforts of Federal, State, and private groups to improve their conditions. Thousands of requests for such information are received annually, and also for copies of publications (a list

may be had on application), charts and exhibits, or the loan of films. Assistance is requested in surveys or in legislative matters; field or research studies are asked for; and many hundreds of complaints are received of unfavorable or illegal conditions of employment, which are replied to and referred to the proper authorities.

In 1939 much time was devoted to two extensive surveys—the women's and children's apparel industry and the canning and packing industry—made for the Wage and Hour Division and other Federal agencies. In the apparel study, pay-roll data for 142,000 workers were secured in the spring; the report went to press in November. The report of the two-year study of fruit and vegetable canning is being written as the year closes. Its uncommon data include year's earnings and fluctuation in employment and earnings from week to week.

Among the publications issued in 1939 are these: *Employed women and family support*—an examination of unpublished Census data for 58,000 women in Fort Wayne, Bridgeport, and Richmond. *Conditions in the millinery industry*—an analysis made at the request of the Millinery Stabilization Commission; *Economic status of university women*—made in co-operation with the American Association of University Women; *Job histories of women at the summer schools*—first-hand information from the students at the summer schools for women workers; and three bulletins giving general information, simply presented, about employed women: (1) *Women at work—A century of industrial change*, (2) *Women in industry—A series of papers to aid study groups*, and (3) *The woman wage earner—Her situation today*.

The Bureau's standards for the employment of women, revised to conform to the practices approved today, were reissued as a leaflet. The bi-monthly news letter, *The Woman Worker*, which keeps its readers informed on current problems and conditions, had a wide distribution.

MARY ANDERSON.

WOMEN'S CLOTHING. See FASHION; GARMENT INDUSTRY.

WOMEN'S CLUBS, GENERAL FEDERATION OF. An organization founded in 1890, and granted a charter by the United States Government in 1901, "for educational, industrial, philanthropic, literary, artistic, and scientific culture, and to bring into communication with one another the various Women's Clubs throughout the world." In 1939 it was composed of approximately 15,000 clubs in the United States, and 87 clubs outside the mainland of the United States; affiliated with it were 12 national organizations. The official publication is *The Clubwoman GFWC*. At the May, 1938, convention in Kansas City, Mo., Mrs. Saidie Orr Dunbar was elected president for the ensuing triennial period. Mrs. Dunbar's program has been built around the administration theme, "Adjusting Democracy for Human Welfare." Programs in the field of public health, child welfare, consumer education and international relations—particularly with countries of South America—have been emphasized during 1939. Headquarters are at 1734 N Street, N.W., Washington, D. C.

WOMEN VOTERS, NATIONAL LEAGUE OF. An organization founded in 1920 for the political education of women through active participation in government. Aware that sovereignty in a de-

mocracy resides in the people and is expressed through public opinion, the League strives to increase the number of citizens who form considered opinions upon the basis of facts. Through activity on a selected program of work, which represents what the majority of the members want to do, women in the League learn to be participants in government with a habit of responsibility for government.

During 1939 the League's activities have been concerned with foreign policies of the United States, including neutrality and trade agreements; structure and functioning of local, county, and state governments; state League legislative programmes; public education; merit system; town or county government; various phases of public welfare; child welfare; housing.

Approximately 100 publications covering its programme range and a News Letter on national events relating to its programme are published. In 1939 the League, whose membership is open to women of all political belief, although its organization is strictly nonpartisan, had 550 local Leagues in 31 affiliated state Leagues, and its budget was \$63,976. A biennial convention is held, the next one to take place in New York City, April 29-May 3, 1940. The President is Marguerite M. Wells and headquarters are at 726 Jackson Place, Washington, D. C.

WOOL. Relatively small supplies of wool on hand in this country, uncertainty of supplies from the Southern Hemisphere, and increase in foreign demand as a result of the war in Europe, resulted in a stimulation of domestic wool prices. However, it was estimated that the amount of wool shorn, or to be shorn, in the United States in 1939 was second largest on record. It was 1 per cent more than the amount shorn in 1938, and about 6 per cent more than the previous ten-year average. A 12 per cent increase in mill consumption in August, the highest reported since March, 1937, resulted in a total wool consumption close to 659,000,000 lb., the 1935 total, and around 50 per cent higher than the consumption during 1938. The increased mill consumption of 1939 was accompanied by large imports. Wool production in Australia in 1939-40 was estimated at 1,005,000,000 lb., but the increased production of 2 per cent over last year was more than offset by a decreased carry-over from the previous year.

Imports of apparel wool into the United States during 1939 totaled 98,194,000 lb., as compared with 30,811,000 lb. for 1938, when consumption was at a low ebb. Imports of carpet wool totaled 144,874,000 lb. in 1939, as compared with 71,908,000 lb. in 1938.

Wool exports from Argentina and Uruguay, in the year Oct. 1, 1938 to Sept. 30, 1939, were heavy, amounting to 485,300,000 lb., as contrasted with 396,300,000 lb. for the seasons from 1934 to 1938. The 1939-40 wool sales in Australia were canceled following the making of arrangements for the purchase of the entire Australian and New Zealand clips by the British Government. However, tentative plans were formulated by the British Government before the end of the year to release fine Australian wools to the United States. It was estimated that 22,500,000 lb. of such wool were available for shipment. The 1939-40 wool clip of the Union of South Africa was estimated at 270,000,000 lb., an increase of 9 per cent over amounts produced in 1938-39. Imports of wool from Argentina and Uruguay decreased to about 15 per cent of total wool shipments in 1938,

although prior to that time about 30 per cent of the exports of those countries were received by the United States.

GEORGE HAINES.

WORCESTER POLYTECHNIC INSTITUTE. A nonsectarian institution for the technical education of men in Worcester, Mass., founded in 1865. The enrollment for the fall semester of 1939 totaled 691. The summer session of 1939 had 67 students. The faculty for 1939-40 numbers 73. The endowment for 1938-39 amounted to \$4,071,149, and the income for the year was \$387,946. There were about 26,000 volumes in the library. President, Wat Tyler Cluverius, B.S., LL.D., D.Nav.Sc., Rear Admiral, U.S. Navy, Ret., inducted Oct. 27, 1939.

WORKERS' ALLIANCE. See RELIEF; UNITED STATES under *Departments and Agencies*.
WORKERS' INTERNATIONAL FRONT AGAINST WAR. See SOCIALISM.
WORKERS SECURITY FEDERATION. See RELIEF.

WORKMEN'S COMPENSATION. See LABOR CONDITIONS; LABOR LEGISLATION.

WORK PROJECTS ADMINISTRATION (WPA). A Federal agency established to provide work on useful public projects for the able-bodied unemployed. The WPA demonstrated its flexibility of operation during the 18-month period that ended on Dec. 31, 1939. First by expanding its activities to alleviate distress resulting from the business recession, and then by contracting them as recovery got under way again, it proved its ability to adapt itself rapidly and smoothly to changing economic conditions.

Although the number of unemployed people in the United States began to drop after reaching the recession peak of 11,400,000 in June 1938 (estimate of American Federation of Labor), the actual amount of distress among those still unemployed continued to increase for several months thereafter. Many who had been able to rely on unemployment compensation, savings, and other expedients during the recession were now finally forced to seek WPA jobs. Another important factor was the desperate situation of tenant farmers and laborers in the cotton-producing areas of the South. As a result, WPA employment continued to rise for the nation as a whole—from about 2,807,000 at the end of June to a high of 3,270,000 in November—although it had begun to drop as early as September in certain areas. By June 30, 1939—end of the fiscal year—unemployment had dropped below 10,400,000 and WPA employment to some 2,421,000.

During that fiscal year the WPA spent over \$2,154,000,000 of Federal funds—of which 3.4 per cent was devoted to administrative costs, 0.7 per cent to miscellaneous programs (chiefly the purchase of surplus clothing for needy people), and 95.9 per cent to project work. Of the nearly \$2,065,000,000 devoted to project work, 91.1 per cent was paid out in wages to workers. These project funds were supplemented by local project sponsors' funds aggregating over \$493,000,000, most of which was used for other than labor costs—for materials, equipment, etc. The sponsors' share of the total cost of WPA project work was 19.3 per cent. (During the three preceding fiscal years the WPA had spent in all nearly \$4,504,000,000 of Federal funds—4.3 per cent of it on administration and 95.7 per cent on project work. To supplement the over \$4,308,000,-

000 of WPA project funds, local sponsors had contributed nearly \$810,000,000, or 15.8 per cent of the total amount spent on project work.)

More than four-fifths of the WPA program (on the basis of employment as well as of expenditures) was devoted during fiscal 1938-39, as during preceding years, to construction work. More than two-fifths of all WPA workers were on road projects—a slightly larger proportion than in earlier years. About a tenth each were employed on public buildings, parks, public utilities, white-collar work, and sewing projects.

The extent and diversity of the program are indicated by the following statistics for projects completed during the fiscal year:—

Approximately 111,000 miles of roads and more than 26,000 bridges were built or improved, mostly in rural areas. More than 24,000 public buildings were newly built, remodeled, renovated, or erected as additions to existing structures. Over 3000 miles of water lines and nearly 3900 miles of sewer lines were newly laid or reconditioned. Over 2000 parks, over 1000 athletic fields, over 2800 playgrounds, and over 100 airports were built or improved.

Although figures showing the amount of non-construction work done during that year are not yet available, some idea of what was accomplished may be got from statistics covering the three previous fiscal years. By June 30, 1938, more than 180,000,000 garments and household articles had been made in WPA sewing rooms for distribution among needy families, and more than 238,000,000 lunches had been served to undernourished school children. Millions of needy adults and children had received aid from WPA medical clinics and nursing service. Some 1,000,000 people were enrolled in 100,000 WPA educational classes. Over 96,000 drawings, paintings, murals, and sculptured works had been produced by art workers; music performances, averaging over 4000 a month, had attracted monthly attendance of around 3,000,000; and writers, chiefly occupied in producing a series of guidebooks, had completed 293 books and pamphlets.

No statistics showing physical accomplishments during the latter half of the calendar year 1939 are yet available, but the amount of work done was proportional to that accomplished during the four preceding years of WPA operation.

Business conditions during the last six months of 1939, following the trend of the fiscal year immediately preceding, continued to improve. By December, total unemployment in this country had dropped below 9,400,000 (A. F. of L. estimate), and by December 27 the number of people on the WPA rolls had dropped to 2,076,000. During this half-year period the WPA spent some \$722,893,000, including about \$696,156,000 of project funds; while local sponsors contributed about \$247,926,000, or 26.3 per cent of all money spent on project work.

A few changes in WPA operation were put into effect during this period, pursuant to the Emergency Relief Appropriation Act of 1939. WPA working hours were standardized at 130 per month for all workers. (Previously the number of hours had varied widely for workers doing different kinds of work.) Wages were readjusted in accordance with available information on living costs in various sections, resulting in higher wages for the South and a slight increase in the average monthly wage for the country as a whole. The amount of Federal money that could

be spent for other than labor costs was reduced from \$7 to \$6 per month per worker. The Federal Theater Project was abolished, and music, art, writers', and historical records projects were required to obtain local sponsorship the same as other projects. Workers (except war veterans) who had been employed continuously for 18 months were dropped from the rolls.

The WPA was made a branch of the new Federal Works Agency on July 1, 1939, along with the Public Buildings Administration, Public Roads Administration, Public Works Administration, and United States Housing Authority. See ARIZONA; also, AERONAUTICS; ART EXHIBITIONS; COAL AND COKE; MUSIC; PAINTING; PRINTS; RELIEF; SCULPTURE.

F. C. HARRINGTON.

WORK RELIEF ACT. See RELIEF.

WORKS PROGRESS ADMINISTRATION. See WORK PROJECTS ADMINISTRATION.

WORLD COURT. The Permanent Court of International Justice of the League of Nations, commonly known as the World Court, has fifteen members chosen for a nine year term, a new term for all beginning with the year 1940. New members are nominated by the existing national groups in the court, each of which may suggest as many as four names; in the case of a nation not represented on the court the government appoints a national group for nominating purposes. An invitation to nominate candidates was issued on Feb. 18, 1939. Germany, Brazil, and Japan, non-members of the League of Nations, but parties to the World Court, were offered the privilege of participating.

On May 19, Pres. Federico Laredo Bru of Cuba appointed Dr. Orestes Ferrara to take the place on the World Court made vacant by the death of Carlos Manuel de Cespedes (q.v.). On May 25, Spain announced that though it had withdrawn from the League following Franco's victory, it would retain its membership in the World Court.

On June 13, the League of Nations published the names of thirteen candidates nominated for World Court membership. To qualify, a candidate must be qualified for the highest judicial post in his own country or must be a recognized authority on international law. Election is made by majority vote of the League Council and Assembly. Among the candidates were two Americans, Manley O. Hudson, (already a member) nominated by Bulgaria, China, Latvia, and Lithuania, and James Brown Scott nominated by Cuba; Antonio de Bustamante nominated by Cuba, Panama, and the Dominican Republic; the Mexican Eduardo Suarez Aranzolo, nominated by Argentina, Panama, and the Dominican Republic; the Italian Dionisio Anzilotti (already a member) nominated by Hungary, Bulgaria, and the Netherlands; and the Spaniard Emanuel Gonzales Hontaria.

Egypt signed the Court's statute in 1939, bringing the number of signatories to fifty-nine. She also signed the Optional Clause.

On September 13, Great Britain, France, India, New Zealand, South Africa, and Australia notified the League of Nations that they no longer considered themselves bound by Article XXXVI of the World Court Statutes, the so-called Optional Clause, which constitutes an engagement to submit juridical disputes to a court of arbitration. The number of states bound by this clause is thus reduced to thirty-three. This action was taken on

the ground that the League Covenant, especially Articles XVI and XVII, had ceased to be considered binding by League members and a new situation had arisen. Australia made the additional statement that it does not consider its engagement to the court as covering any disputes arising out of the present crisis.

The number of judgments rendered by the court up to June, 1939, reached the number of thirty-two. On October 14, Dr. J. Gustavo Guerrero (El Salvador), President of the Court, said that the Court would meet and that he would preside in the next regular session in the Peace Palace at the Hague despite the war. The Court took under consideration a dispute between Belgium and Bulgaria over a Belgian street railway franchise in Sofia. This indicates the type of controversy which generally engages the attention of the court under existing conditions.

On October 16, it was announced from League of Nations headquarters in Geneva that the Court would be asked to reduce its 1940 budget by one third. This was in line with the general curtailment of League functions because of budget difficulties caused by the withdrawal of members, and the expulsion of Russia.

In November, 1939, the League authorities decided to postpone election of new World Court members, the sitting members to stay in office another year.

The membership of the Court at the end of December, 1939, was as follows: Dr. J. Gustavo Guerrero, President, (El Salvador); Sir Cecil Hurst, Vice-President, (United Kingdom); Count Rostworowski (Polish); M. Fromageot (French); Sr. de Bustamante (Cuban); Sr. Altamira (Spanish); Signor Anzilotti (Italian); Sr. Urrutia (Colombian); Mr. Negulesco (Rumanian); Jonkheer van Eysinga (Netherlands); Mr. Cheng (Chinese); Dr. Hudson (United States of America); Mr. Ch. De Visscher (Belgian); Mr. Erich (Finnish).

B. P. ADAMS.

WORLD'S FAIR OF 1942 (ROME). See FAIRS AND EXPOSITIONS; ARCHITECTURE under Italy.

WORLD TRADE. See IMPORTS AND EXPORTS.

WPA. Work Projects Administration (q.v.), formerly Works Progress Administration.

WRIGHT, WILLARD HUNTINGTON (S. S. VAN DINE). An American writer, died in New York, Apr. 11, 1939. Born in Charlottesville, Va., on Oct. 15, 1888, he was educated at St. Vincent College, Pomona College, Harvard, and abroad, and in 1907 turned to a journalistic career. Subsequently he was literary editor of the Los Angeles Times until 1913, literary critic (1910-14) and dramatic critic of *Town Topics* (1912-14); editor of *Smart Set Magazine* (1912-14), art critic of *The Forum* (1915-16), for which he arranged the Forum exhibition; art critic of *International Studio* (1916-17), literary editor of the New York Evening Mail (1917), music critic and art editor of the San Francisco Bulletin (1918-19), and art critic of *Hearst's International Magazine* (1922-23).

During this period he wrote widely on art and literary criticism, and published several books on these topics, including *Modern Painting—Its Tendency and Meaning* (1915); *The Forum Exhibition of Modern American Painters* (1916); *The Great Modern French Stories* (1918); *The*

Future of Painting (1923), and *Modern Literature* (1926).

While convalescing from a nervous breakdown due to overwork, he became interested in detective stories and decided that he could write some as good as, if not better than, those he read. His first book, *The Benson Murder Case* was published in 1926, and his suave, learned detective, Philo Vance, became an instant success. Thereafter he wrote, among others, *The "Canary" Murder Case* (1927), *The Greene Murder Case* (1928), *The Casino Murder Case* (1934), *The Powwow Murder Case* (1938), and *The Gracie Allen Murder Case* (1939).

WÜRTTEMBERG. See GERMANY.

WYOMING. Area and Population. Area, 97,914 square miles; included (1930) water, 366 square miles. Population, Apr. 1, 1930 (census), 225,565; July 1, 1937 (Federal estimate), 235,000; 1920 (census), 194,402. Cheyenne, the capital, had (1930) 17,361 inhabitants.

Agriculture. Wyoming harvested, in 1939, 1,735,000 acres of principal crops. Tame hay, on 732,000 acres, gave 803,000 tons (\$6,263,000, estimated farm value of crop); sugar beets, on 50,000 acres, 541,000 tons (\$2,975,000, value of crop of 1938, latest estimate); wheat, 276,000 acres, 2,812,000 bu. (\$1,772,000, for 1939 crop); dry beans, 46,000 acres, 460,000 100-lb. bags (\$1,354,000); corn, 161,000 acres, 1,771,000 bu. (\$204,000); potatoes, 20,000 acres, 1,600,000 bu. (\$1,200,000).

Mineral Production. Native minerals produced in Wyoming attained, for 1937, a total value of \$41,087,908. Of this, petroleum supplied somewhat less than half, coal over one-fourth, and natural gas and gasoline extracted therefrom most of the remainder. All the minerals of primary economic importance were thus in the class of fuels. An adverse state of business failed to cut down the yearly yield of petroleum, which held at 19,004,000 barrels, approximately, for 1938, as against 19,166,000 barrels (value, \$18,860,000) for 1937. A new deposit of petroleum, the Cole Creek field, in Natrona County, was discovered in 1938, yielding at a depth of 8000 feet; the six-year-old Lance Creek field became the rival of the older and declining Salt Creek. The mining of coal decreased to a yearly total of some 5,200,000 net tons (1938), from 5,918,359 tons, \$11,600,000 in value (1937). The yield of the natural-gas wells, about 38 billion cu. ft. for 1938 as for 1937, was not all metered in either year. Much of it was put back underground after being stripped of gasoline; the total delivered to consumers in 1937 was 31,023 million cu. ft.; by value at the wells, \$1,008,000; by value where consumed, \$4,997,000. Gasoline taken from natural gas totaled 33,548,000 gallons for 1938; by value, \$1,718,000.

Manufacturing. The U.S. Census of Manufactures' biennial report on Wyoming, issued in 1939, summarized the activity of the year 1937 in the totals that follow (with those for 1935 as well, appended in parenthesis): Active manufacturing establishments numbered 235 (209), employed 3795 wage-earners (3172), and paid them \$5,218,821 (\$4,072,185); the aggregate of all factories' output was \$49,128,729 (\$42,192,195), to which sum the processes of manufacture contributed, in value, \$16,100,652 (\$12,599,840). The chief form of manufacture, the refining of petroleum, occupied 1169 of the wage-earners, paid \$2,117,522 of the manufacturing wages, and attained \$29,993,494 in output; of this amount,

\$8,497,098 was ascribed to the value imparted by the processes of manufacture. Thus the refineries afforded three-tenths of the manufacturing employment, paid two-fifths of the wages therein, produced three-fifths of the manufactured goods, and imparted more than half of the value added by manufacture. Of industries found in all States, Wyoming had makers of soft drinks, bakers, printing shops, and machine shops. Their several totals of production for 1937 ran about or below \$1,000,000. Lumber products, butter-making, and cheese-making (of the industrial type) ran on about the same scale.

Education. Wyoming's inhabitants of school age (from 6 years to 21) were reported, for the academic year 1938-39, as numbering 72,626. The year's enrollments of pupils in the public schools totaled 55,393; this comprised 39,492 in elementary study, 15,339 in high schools, and 562 others. Expenditure for public-school education, \$5,678,422, included salaries for 2741 teachers, who averaged from \$1350 in high-school positions down to \$650 in the rural schools.

Legislation. The regular biennial, 40-day session of the Legislature met in January. Its general appropriation act carried about \$4,000,000 for the expenditures of the State government in the course of the next two fiscal years. Republicans, again in control, overthrew legislation of 1937 that had set up a game and fish commission; the commission was reorganized, to be manned with new appointees. The Legislature gave the State's adherence to a compact, already entered by 25 States, for supervising paroles and persons on parole, and for aiding their extradition.

Political and Other Events. Nels H. Smith was inaugurated as Governor in January. Disputes with other States over water rights in rivers had an important bearing on Wyoming's outlook. The compact of the seven States of the Colorado River basin, for the amended partition of water and electricity from the Boulder Dam development, awaited the ratification of Wyoming and other States concerned. This agreement, drafted in December, 1938, proposed that the parties in California contracting for electricity from this source should pay \$500,000 a year into a fund, to be spent, for the first three years, in making surveys of the whole basin of the Colorado River and thereafter for development in the upper part of the basin (largely Wyoming). In the U.S. Supreme Court the State was defendant, with Colorado, in a suit brought by Nebraska to settle respective priority of rights to water in the North Platte River. In the same court Wyoming appeared as a petitioner seeking that action be taken against Colorado for contempt as having violated the Court's order of 1936 limiting the latter State's withdrawal of water from the Laramie River; the Supreme Court called upon Colorado, October 9, to respond in this action; the matter of the suit was that persons distributing water for irrigation to farmers in the Meadowland district in Colorado had forcibly opened locks and released, in July, water much in excess of that which the decree of 1936 had allotted to this district.

The payments to persons in Wyoming dependent in whole or in part on public support totaled \$764,000 for June, 1939. The monthly total payment was low in proportion to the payments in most other States; but its rate per capita exceeded considerably the average rate for the Union, per capita of the population. On the latter basis the

payments for June came to \$2.34 for the United States and to \$3.39 for Wyoming.

Officers. Wyoming's chief officers, serving in 1939, were: Governor, Nels H. Smith (Rep.); Secretary of State, Lester C. Hunt; Treasurer, Mart T. Christensen; Auditor, William Jack; Attorney-General, Ewing T. Kerr; Superintendent of Public Instruction, Esther L. Anderson.

WYOMING, UNIVERSITY OF. A State institution of higher education at Laramie, founded in 1886. The enrollment for the autumn term of 1939 was 2043. The 1939 summer session had an attendance of 915. The faculty numbered 212. The endowment amounted to \$2,367,100 and the income for the year was \$96,054. A Liberal Arts Building was completed. There were 100,061 volumes in the library. President, Arthur Griswold Crane, Ph.D.

X-RAY EQUIPMENT. See ELECTRICAL INDUSTRIES.

YAKUT AUTONOMOUS SOVIET SOCIALIST REPUBLIC. See RUSSIAN SOVIET FEDERATED SOCIALIST REPUBLIC.

YALE UNIVERSITY. A nonsectarian institution for higher education in New Haven, Conn., founded in 1701. The enrollment for the autumn of 1939 was 5744. Of the candidates for degrees or certificates, 735 were in the Graduate School, 1532 in Yale College, 483 in the Sheffield Scientific School, 320 in the School of Engineering, 836 in Freshman Year, 250 in the School of Medicine, 238 in the Divinity School, 369 in the School of Law, 339 in the School of the Fine Arts, 96 in the School of Music, 37 in the School of Forestry, and 131 in the School of Nursing. There were 425 others not candidates for degrees. The faculty numbered 1024. The endowment of the University amounted to \$100,448,707 and the income for the year was \$7,317,889. The libraries contained more than 2,850,000 volumes. President in 1939, Charles Seymour, Ph.D., Litt.D.

YANAON. See FRENCH INDIA.

YAP ISLANDS. See JAPANESE PACIFIC ISLANDS.

YEATS, yâts or yêts, WILLIAM BUTLER. An Irish poet and dramatist, died near Mentone, France, Jan. 28, 1939. Born at Sandymount, near Dublin, Ireland, June 13, 1865, the son of a distinguished artist, J. B. Yeats, he was educated at Godolphin School, Hammersmith, England, and at Erasmus Smith School in Dublin. After studying art for three years he turned to literature in 1886 with the publication of his first poem, "The Island of Statues" in the *Dublin University Review*. For two years (1887-89) he was a journalist in London, but with the publication of *The Wanderings of Oisín* in 1889 he devoted his life thereafter to writing. His first poetic play, *The Countess Kathleen* appeared in 1892, and in the following year he published a book of essays, *The Celtic Twilight*, and edited the *Poems of William Blake*, and with E. J. Ellis, *The Works of William Blake*. He also edited *A Book of Irish Verse* (1895) and in that same year his first volume of poetry appeared.

Becoming interested in the formation of an Irish national theater in 1897, with Lady Gregory and others he established the Irish Literary Theatre, and the first play to be performed was his *The Countess Kathleen* (1899). He became the active director of the Theatre and served it for 30 years, and under his direction a high pinnacle of folk drama was maintained. His *On Baile's*

Strand opened the Abbey Theatre in 1904. In later years during his Senatorship in the Free State he pleaded for the establishment of a national theater and the Abbey was endowed with an annual income by the government. His best known plays were *The Pot of Broth*, *The Hour Glass*, and *Cathleen ni Houlihan*, and a great favorite was *The Land of Heart's Desire*. Several of his plays, notably those mentioned above and *Deirdre* (1907) form an important part of world anthologies of dramatic writing.

But it is for his verse, rich in Irish symbolism, that he will be best remembered. Praise of his work culminated in the award of the Nobel Prize for Literature to him in 1923, and in 1935, Maselfield, the poet laureate of England, referred to him as "the greatest living poet." His work, mostly in ballad form, may be divided into two periods, the first, a period rich in emotion and full of brilliant figures weighted with mysticism, and the last, more conservative in form and austere. His greatest lyrical poetry was produced between the years 1915-25. His concern over his work in his later years led to his re-editing and rewriting almost all of it, and as a result eight collections of his work appeared, each superseding the previous. Of all his work, *The Wind Among the Reeds* (1899) was the only one untouched, and it has been said of it that it fulfilled the Symbolist idea of the French poets.

One of the leaders of the Irish literary renaissance of the 1920's he united the Irish revolutionary tradition with that of the folk singers and with the ancient heroic tradition. He was an important figure in the Irish Nationalist movement, and served in the Senate of the Irish Free State during 1921-28. With George Bernard Shaw he founded the Irish Academy of Letters, although he early relinquished his connection with that body.

His works up to 1908 were published in a Collected Edition. Thereafter they include *The Green Helmet and Other Poems* (1910); *J. M. Synge and the Ireland of His Time* (1911); *Plays for an Irish Theatre* (1912); *Responsibilities* (1914); *Reveries* (1916); *Per Amica Silentia Lunae* (1918); *The Cutting of an Agate* (1919); *The Wild Swans at Coole* (1919); *Michael Robartes and the Dancer* (1921); *Seven Poems and a Fragment* (1922); *The Trembling of the Veil* (1922), which was privately printed and formed the first part of his autobiography; *A Vision* (1926), also privately printed; *The Tower* (1928), his last notable work; *Selected Poems, Lyrical and Narrative* (1929); *The Winding Stair* (1929); *Words for Music, Perhaps* (1932); *Collected Poems* (1933); *Wheels and Butterflies* (1934); *Collected Plays* (1934); *Full Moon in March* (1935); *Dramatis Personae* (1936), considered an outstanding intellectual autobiography; and *Essays by W. B. Yeats, 1931-36* (1938). *Later Poems* (1923), *Plays in Prose and Verse* (1923), *Plays and Controversies* (1923), *Essays* (1924), *Early Poems and Stories* (1925), and *Autobiographies* (1926) were the first volumes of a new collected edition of his work.

YEMEN. See ARABIA.

YESHIVA COLLEGE. A college of liberal arts and sciences for men, under Jewish auspices, founded in New York City in 1928, as an integral part of the Rabbi Isaac Elchanan Theological Seminary, which was incorporated in 1896, later absorbing the Yeshiva Etz Chaim, the oldest Yeshiva on American soil, founded in 1886. The

enrollment for the autumn of 1939 was 217. There were 36 faculty members. The endowment for the year amounted to \$180,527, and the income was \$125,982. The library contained 30,500 volumes. President, Bernard Revel.

YOUNG MEN'S CHRISTIAN ASSOCIATION. An educational, social, physical, and spiritual movement among men and boys, which originated in London in 1844 under the leadership of George Williams. According to the latest figures available there were in 54 countries of the world, 10,380 local associations, unions, or fellowships with a membership of 1,869,963. These associations employed 5822 officers and owned and occupied 1792 buildings. In 1938 the United States had the largest membership (1,253,846) and the largest number of Y.M.C.A. buildings, representing a property value of \$212,508,800. Local associations numbered 1290, with 3873 employed officers and 107,600 directors and committee men.

The general board of the associations in the United States is the National Council of the Young Men's Christian Associations, with headquarters at 347 Madison Avenue, New York City. Ralph W. Harbison, president; John E. Manley, general secretary. The National Council is one of 33 national movements of federated local associations which constitute the World Alliance of Young Men's Christian Associations, with headquarters at 52 rue des Paquis, Geneva, Switzerland. The president in 1938 was Dr. John R. Mott, of New York City. Tracy Strong, of Geneva, was general secretary.

YOUNG WOMEN'S CHRISTIAN ASSOCIATION. An organization whose purpose is to advance the physical, social, intellectual, and spiritual interest of young women. The first Association was formed in New York City in 1858. By 1939 there were throughout the United States 1012 Associations, affiliated in a national organization whose active body is the National Board of the Young Women's Christian Associations. Of these, 422 are in cities, towns, and rural communities, and 590 on college and university campuses. There are also 478 Registered Y.W.C.A.'s in rural centers, 63 branches and centers for colored girls and women, and 18 International Institutes for foreign-born women and girls. During the past year there have been nearly 3,000,000 women and girls served by the Y.W.C.A. of this country or taking some part in its programs. Of these 3,000,000, about 548,000 are members, of whom 40,000 are students.

The organization employs 2699 professional workers, of whom 2564 are connected with local Associations, 105 are on the national staff, and 30 are American secretaries serving in foreign countries. Working as volunteers, as board and committee members, and as advisers in local Associations are 95,052 women. The next biennial convention will be held in Atlantic City, New Jersey, Apr. 10-16, 1940. Mrs. Austin L. Kimball of Buffalo, N. Y., is the president of the national organization. Mrs. John French of Greenwich, Conn., is the president of the National Board, to which is entrusted the work of the national body during the interim of conventions. Headquarters of the National Board are at 600 Lexington Avenue, New York City, with Miss Emma P. Hirth as general secretary.

YOUTH PROBLEMS. See EDUCATION; NATIONAL YOUTH ADMINISTRATION.

YUGOSLAVIA. A kingdom in the Balkans. Capital, Belgrade (Beograd). Sovereign in 1939,

Peter II, who succeeded to the throne under a regency upon the assassination of his father, Alexander I, on Oct. 9, 1934.

Area and Population. Yugoslavia has an area of 95,576 square miles and a population estimated at 15,630,000 on Jan. 1, 1939 (13,934,038 at the 1931 census). About 80 per cent of the population is rural. Living births in 1937 numbered 423,794 (27.7 per 1000); deaths, 242,184 (15.8 per 1000); marriages, 117,646 (7.7 per 1000). The 1931 census populations of the chief cities were: Belgrade (Beograd), 241,542; Zagreb (Agram), 185,581; Subotica, 100,058; Sarajevo, 78,182; Skopje, 64,807; Novi Sad, 63,966; Ljubljana, 59,768.

National Defense. Military service is compulsory. On Nov. 1, 1939, the army consisted of 500,000 active soldiers and 1,340,000 trained reserves, according to the Adjutant General's Office, Washington, D. C. The air force comprised 6500 men and 800 aircraft. Naval units included 1 flotilla leader, 8 torpedo boats, 11 minelayers, 3 destroyers, 4 submarines, 1 aircraft tender, 1 small ex-German cruiser, and various river craft. The personnel was 583 officers and 8041 men.

Education and Religion. More than 40 per cent of the population is illiterate. School attendance in 1938-39 was: Elementary, 1,474,224; secondary, 177,034; university, 16,969. At the 1931 census, 48.7 per cent of the population were members of the Serbian Orthodox Church; 37.45 per cent were Roman Catholics; 11.2 per cent Moslems; 1.66 per cent Protestants; .49 per cent Jews, and .32 per cent Greek Catholics.

Production. About 85 per cent of the population are supported by agriculture. Yields of the chief cereals in 1939 (in metric tons) were: Wheat, 2,869,200; barley, 433,600; rye, 244,800; oats, 346,200; and corn, 3,694,200. Other leading crops in 1938 were: Potatoes, 62,825,000 bu.; sugar beets, 557,000 metric tons; beet sugar (1938-39 season), 86,000 metric tons; tobacco, 32,425,000 lb.; wine, 123,429,000 gal.; prunes (export), 15,055,000 lb.; hemp fiber, 122,135,000 lb.; flax fiber, 28,478,000 lb. Livestock statistics for 1938 showed 4,267,000 cattle; 3,451,000 swine; 10,137,000 sheep; 1,890,000 goats; 38,000 buffaloes; 22,763,000 poultry, and 1,407,000 horses, mules, and asses.

The value of mineral production in 1938 was 2,230,688,000 dinars. The output of the chief minerals in 1938 was (in metric tons): Coal, 450,000; copper, 42,000; lead (smelter), 8600; zinc (smelter), 4000; bauxite, 406,400; iron ore, 300,000; chrome ore, 28,000; steel ingots and castings, 200,000; pyrites, 150,000. The principal industries are flour milling, brewing and distilling, cotton spinning and weaving, tanning, boot-making, pottery, and iron-working.

Foreign Trade. In 1938 imports were valued at 4,975,342,000 dinars (4,757,383,000 in 1939) and exports at 5,047,434,000 dinars (5,521,187,000 in 1939). The chief exports were wood, corn, wheat, crude copper, and swine. Germany supplied 32.5 per cent of the 1938 imports; Czecho-Slovakia, 10.7; Italy, 8.9; United Kingdom, 8.7; Austria, 6.9, and the United States, 6.0. Of the 1938 exports, Germany took 35.9 per cent; United Kingdom, 9.6; Czecho-Slovakia, 7.9; Belgium, 6.7; Italy, 6.4; Austria, 6.1; and the United States, 5.1. See **IMPORTS AND EXPORTS**.

Finance. Budget returns for the fiscal year ending Mar. 31, 1939, showed receipts of 12,285,000,000 dinars and expenditures of 11,291,000,000 dinars. The budget estimate for 1939-40 balanced at 12,947,000,000 dinars. The total debt on May 1,

1939, was 24,620,000,000 dinars. The nominal average exchange value of the dinar was \$0.0231 in both 1937 and 1938 and \$0.0227 in 1939.

Transportation. With 5862 miles of line, the railways in 1937 carried 52,964,278 passengers and 19,241,974 metric tons of freight. The gross receipts were 2,410,000,000 dinars. The highway mileage in 1939 was 26,183 (see **ROADS AND STREETS**). Excluding operations of international lines, the civil air statistics for 1938 were: Miles flown, 331,000; passenger-miles flown, 1,212,000. The merchant marine on June 1, 1939, comprised 190 vessels (of 100 tons each or over) with a capacity of 411,384 gross tons. Entrances at Yugoslavia ports in 1937 totaled 102,548 vessels of 20,840,668 net tons.

Government. The Constitution of Sept. 3, 1931, declared Yugoslavia a constitutional monarchy, in which legislative power is vested jointly in the King and Parliament and executive power in the King, acting through a ministry which is not responsible to Parliament. Parliament in 1939 consisted of a Senate of 94 members (47 elected and 47 appointed by the Crown) and a Lower Chamber (Skupstina) of 371 members, elected by popular suffrage for four years. The Regency governing during the minority of King Peter was headed by Prince Paul, a cousin of the late King Alexander. Premier at the beginning of 1939, Dr. Milan Stoyadinovich, heading a Yugoslav Radical Union cabinet. For changes in 1939, see *History*.

HISTORY

Croatia Wins Partial Autonomy. Of outstanding significance in Yugoslavia's political evolution was the extension to the Croats in 1939 of a large measure of the autonomy for which they had struggled ever since Croatia became part of the Kingdom after the World War. The growing foreign dangers that beset Yugoslavia convinced Prince Paul and other Serb leaders that a settlement of Croat grievances was essential to the preservation of the state.

The opposition of the Stoyadinovich Government was overcome through its forced resignation on February 4. When the new Parliament elected in December, 1938, convened on Jan. 16, 1939, the 47 Croat members again boycotted the sessions (see 1938 **YEAR BOOK**, p. 793 for background). Five members of the cabinet then offered their resignations, stating that an agreement with the Croats was absolutely necessary. Premier Stoyadinovich then resigned. Prince Paul called on Dr. Dragisha Cvetkovich, a member of the Stoyadinovich Cabinet, to form a new Radical Union Government for the express purpose of negotiating a Serb-Croat accord. These negotiations, after surmounting many difficulties, were crowned with success on August 24, when Premier Cvetkovich and Dr. Vladimir Matchek, leader of the Croatian Peasant party, signed an accord.

In accordance with this agreement, the Cvetkovich Cabinet resigned on August 25 and was reorganized the next day with Dr. Cvetkovich as Premier and Dr. Matchek as Vice Premier. Six Croats and 3 members of the Serbian Opposition entered the cabinet along with 7 other Serbs, 1 Slovene, and 1 Bosnian Moslem. A decree issued the same day (August 26) created the new Banovina (province) of Croatia, with Zagreb (Agram) as its capital. To the Croatian authorities of the Banovina was transferred control of all activities except foreign affairs, national defense, foreign trade, and communications. The new Croatian gov-

ernment had jurisdiction over 26 per cent of the area and 28 per cent of the population of Yugoslavia.

A separate Croat legislative assembly was established and a Croat governor (*Ban*) appointed (August 29). As a further concession to Croat demands, the Yugoslav Parliament was dissolved on August 26 and a new law providing for free elections was ordered drafted. At the same time the Serb and Yugoslav capital was transformed into a federal district (Directorate), on the order of the District of Columbia, through extension of its boundaries to include the neighboring towns of Zemun and Panceva. Other decrees issued August 26 aimed at the termination throughout Yugoslavia of the dictatorial regime established in 1929 and the restoration of a parliamentary democracy.

Political Unrest. The Croat-Serb accord was followed almost immediately by the outbreak of the European War, which multiplied the difficulties involved in effecting the transition of Yugoslavia from a unitary dictatorship to a federal democracy. This program was bitterly opposed by Serb reactionaries. There was a split in the ranks of the government (Yugoslav Radical Union) party in June over the Croat-Serb negotiations, leading to the expulsion from the party of ex-Premier Stoyadinovich and 19 other Serb deputies. At the same time many Croat extremists were dissatisfied with the concessions obtained. Unrest in Croatia and in other minority districts—Slovenia and Bosnia—was reportedly fanned by German and Italian agents seeking to weaken Yugoslav unity. The large German minority agitated vigorously for racial autonomy.

On September 24 the Croatian authorities prohibited public meetings following the development of an extremist agitation against Dr. Matchek's leadership, resulting in sporadic disorders and bloodshed. A score of police agents and other officials were murdered, and several hundred Croats in danger of assassination for their co-operation with the Serbs took refuge in Belgrade. An extensive round-up of anti-government agitators was launched in Zagreb October 20. On October 25 Zagreb University was closed as a result of student riots. On December 4, 40 Croat extremists were arrested for plotting the assassination of Dr. Matchek and the Governor of Croatia.

The unrest in Croatia was duplicated during the last quarter of 1939 in the Serb districts of Yugoslavia. Attributed mainly to Communist propaganda in favor of the Soviet Union and against Britain and France, rioting between Communist and Nationalist students led to the closing of Belgrade University on November 30. During December outbreaks at Belgrade, Split and many other points led to the arrest of hundreds of alleged Communists. To counter the Communist propaganda, the government on December 23 released nearly 3,000,000 peasants owning small plots of land from the payment of taxes.

The Cvetkovich Government on September 18 assumed virtual dictatorial powers through a decree authorizing it to abrogate or change any existing law. Nevertheless it proceeded with its federalization plan. On November 7 it was announced that Bosnia and Herzegovina would be granted the same autonomous rights as Croatia. Senatorial elections held November 12 were boycotted by the Serb Opposition groups and all 47 candidates on the government list were elected, including 15 Croat Peasant party members. The projected law

for the election of a new Skupshtina was not completed by the end of 1939 and no date for the voting had been fixed by the year end.

Economic Measures. Part of the political unrest was attributed to higher prices and shortages resulting from the European War. The emergency measures introduced by the government to deal with this situation included a temporary restriction on withdrawal of bank deposits; regulations against profiteering and unwarranted price increases; and establishment of government agencies to safeguard food and coal supplies, accumulate foodstuff reserves, and control the production and export of minerals. Early in September the National Bank of Yugoslavia was empowered to regulate imports and exports through control of foreign exchange transactions. Effective August 29, the dinar was detached from the pound sterling and linked to the U.S. dollar at 55 dinars to the dollar, or \$0.018 against the previous official rate of \$0.023. On October 5 the National Bank was authorized to revalue its gold and foreign exchange holdings at a level representing a 39 per cent depreciation of the dinar in terms of gold.

Foreign Relations. The international position of Yugoslavia, ringed by powerful and potentially hostile states, was sufficiently alarming in 1938 (see 1938 YEAR BOOK, p. 794). But the menace to its independence and security mounted steadily during 1939. By the Little Entente and Balkan Entente treaties, Yugoslavia was committed to defend Rumania against a Hungarian attack and to aid Rumania, Turkey, and Greece against Bulgarian attack, in return for reciprocal guarantees. The growing revisionist sentiment in Hungary and Bulgaria thus threatened to draw Belgrade into war.

Still more dangerous was the growing threat from the great powers. German absorption of Bohemia and Moravia in March wiped out one of Yugoslavia's partners in the Little Entente. By transferring the large Czech capital investments in Yugoslavia to German control, it gave the Reich a tighter economic stranglehold upon the kingdom. Italian annexation of Albania in April afforded Mussolini a new base for possible invasion of Yugoslavia or disruption of its internal unity. The conclusion of the Italo-German alliance in May increased Yugoslavia's danger from both these powers.

In September the re-entrance of Russia into Balkan power politics added a new element of foreign and internal danger. Soviet intrigues and pressure upon Bulgaria threatened to end Bulgarian-Yugoslav friendship and co-operation. The spread of Communist propaganda within Yugoslavia widened the breach between the anti-Soviet Belgrade Government and some sections of the Yugoslav people who were pro-Soviet. It also gave Italy an excuse for increasing pressure upon the Yugoslav Government. Late in 1939 Mussolini hinted that he might be forced to intervene in Yugoslavia to prevent Soviet influence from gaining a strategic foothold on the Adriatic. At the same time the strongly Catholic Slovenes and some Croats began to look to Rome rather than to Belgrade to defend them against the Communist menace.

These imminent perils forced the Belgrade Government to cling throughout 1939 to a policy of strict neutrality, although the kingdom's long-term interests and its popular sympathies alike linked it to the cause of the Anglo-French alliance. Premier Cvetkovich, like his predecessor, strove to balance Yugoslavia between Germany, Italy, and

the Allies, while seeking to reduce the danger of conflict among the Balkan and Danubian powers. At the same time the government took extensive precautions to defend the kingdom against attack from any quarter. After the outbreak of the European War, about 500,000 men were mobilized.

The attempt to create a bloc of neutral Balkan and Danubian powers, pursued in co-operation with Turkey and with some Italian aid, was wrecked by the refusal of Hungary and Rumania to compromise their territorial controversy. The policy of balancing Germany, Italy, and the Allies against one another proved more and more difficult with all three bringing progressively greater pressure to bear for economic and political concessions.

In April Yugoslavia side-stepped a British offer to guarantee its independence. In May it formally complained of Turkey's action in forming a tentative alliance with Britain without consulting the other members of the Balkan Entente. On July 10 the Yugoslav and Bulgarian Premiers jointly declared for a Balkan policy of "peace and independence," thus rejecting a German bid for an alliance. A month later Belgrade turned down a German-Italian demand for its benevolent neutrality and for use of Yugoslav railways by the Axis in the event of a European conflict.

The German-Soviet rapprochement and the outbreak of the war forced Yugoslavia to seek closer relations with Italy to safeguard its own neutrality. The kingdom soon became one of the principal Balkan centers of the Nazi struggle to obtain essential foodstuffs and raw materials and of Anglo-French efforts to prevent the Reich from getting them. Italy likewise entered the battle for Yugoslav trade. A German-Yugoslav trade pact signed October 16 provided for increased shipments of minerals and timber to the Reich in return for German armaments. To divert to Germany the copper, lead, and zinc produced by important French and British-owned mines in Yugoslavia, the Belgrade authorities on November 12 assumed control over the production and export of all minerals. Sharp protests from Britain and France and the threat of retaliatory economic action caused the government to postpone this program. Seeking to break Germany's economic stranglehold, the British and French undertook to purchase larger quantities of Yugoslav agricultural products and in December opened negotiations for a large armament credit to Yugoslavia.

See BULGARIA, FRANCE, GERMANY, GREAT BRITAIN, GREECE, HUNGARY, ITALY, RUMANIA, and TURKEY under *History*; BALKAN ENTENTE; LITTLE ENTENTE; MILITARY PROGRESS; NAVAL PROGRESS; REPARATIONS AND WAR DEBTS.

YUKON, yōō'kōn. A territory of northwestern Canada. Area, 207,076 square miles; population (1939 estimate), 4000 as against 4230 in 1931. Dawson, the capital, had 828 inhabitants in 1932; Whitehorse, 540. The mining of gold, silver, and lead was the main occupation of the people. In 1938 the total mineral output was valued at \$3,959,570, of which gold (72,368 fine oz.) accounted for \$2,545,544; silver (2,844,659 fine oz.), \$1,236,772; and lead (5,198,990 lb.), \$173,854. The territory had 58 miles of railway, 324 miles of wagon roads, and 978 miles of sled roads and trails. For the year ended Mar. 31, 1938, revenue totaled \$213,712; expenditure, \$212,597. The Yukon, which has been a separate political unit since 1898, is governed by a controller and a territorial council of three elected members. It elects a member to the House of Commons of the Cana-

dian parliament at Ottawa. Controller, George A. Jeckell.

ZANZIBAR PROTECTORATE. A British East African protectorate, consisting of the islands of Zanzibar (640 sq. mi.) and Pemba (380 sq. mi.). Total population (Jan. 1, 1939), 241,792 compared with (1931 census) 235,428 (Zanzibar, 137,741 and Pemba, 97,687). The town of Zanzibar (capital) had 45,276 inhabitants. Tentative figures, for all races (per 1000), place the crude birth rate at 14.1 and the death rate at 20.7.

Production and Trade. The production of cloves is the chief industry; about 83 per cent of the world's supply are grown in the islands. During 1938, 7860 tons of cloves were exported. Copra (11,964 tons exported in 1938), clove oil, and sesame oil are important products. Cassava, tobacco, citrus fruits, rice, maize, potatoes, and legumes are grown. Mineral deposits are not known to exist. Forests are of little extent. Pottery, rope, soap, coconut oil, jewelry, and mats are manufactured. In 1938, imports were valued at £993,521; exports (including re-exports of £181,867), £844,820. The main imports consisted of rice, cotton piece goods, petroleum, sugar, ivory, flour, and tobacco. Ocean-going vessels which entered the port of Zanzibar numbered 322 and represented a net registered tonnage of 1,594,568. In 1939 there were 243 miles of roads and 627 automobiles.

Government. For the year ended Dec. 31, 1938, revenue totaled £465,000; expenditure, £463,000; public debt—nil. For 1939, revenue was estimated at £471,815 and expenditure at £460,862. The government is administered by the British Resident who exercises his functions under the Zanzibar Orders in Council of 1924 and 1925. There is an executive council of 8 members (the Sultan—president, British Resident—vice president, 3 ex-officio members, and 3 other senior officials appointed by the Sultan) and a legislative council of 15 members (British Resident—president, 3 ex-officio members, 5 official and 6 unofficial members appointed by the Sultan). Legislation consists of Decrees of the Sultan which, when countersigned by the British Resident, are binding on all persons. Sultan, Seyyid Sir Khalifa bin Harub (succeeded Dec. 9, 1911); British Resident, John H. Hall (assumed office, Oct. 5, 1939).

ZINC. Outstanding events affecting the world's zinc industry in 1939 were the war abroad and the reciprocal trade treaty between the United States and Canada. Under the terms of the treaty, which went into effect Jan. 1, 1939, the U.S. tariff on slab zinc and zinc in ore was reduced 20 per cent. This immediately depressed the domestic industry and lowered the price of the metal, so that for the first eight months of the year activity was at a low level. During that time imports of slab zinc encouraged by the treaty, rose to more than 16,000 tons, plus 9000 tons of zinc in ore. Total imports for 1939 amounted to 73,883 short tons; total exports amounted to 517,114 short tons.

The price from January to July 1939, was 4.50¢ per lb., St. Louis. Toward the end of the year, when war in Europe caused consumers to cover future requirements, the price rose to 6.50¢ and remained at that level until December, when it dropped successively to 6.00¢ and 5.75¢.

On Dec. 18, 1939, the British Ministry of Supply posted maximum buyers' price of £25¼ per long ton on ordinary brands of foreign zinc, delivered duty paid. Up to September, when the

London Metal Exchange was closed, the 1939 price had ranged from £13½ to £14½.

Zinc production, all grades, in the United States in 1939 is estimated by American Bureau of Metal Statistics at 538,198 tons, compared with 456,990 tons in 1938, and 589,619 in 1937. Domestic shipments rose rapidly in September and October, 1939, but tapered off again toward the end of the year. For 1939, shipments of all grades totaled 598,972 tons or about 60,000 tons more than production. Stocks of all grades diminished rapidly with increased fall buying, and closed the year at 65,995 tons, compared with 128,407 at the end of January.

United States production of Prime Western slab zinc in 1939 according to American Zinc Institute, amounted to 239,922 tons, compared with 219,553 tons in 1938. Shipments for the year were 258,872 tons, reducing stocks from 51,875 tons in January to 30,052 tons in December. Net decrease in stocks for the year was 18,950 tons.

The principal zinc producing countries in order of importance are United States, Belgium, Germany, Canada, Poland. War in Europe has disrupted ordinary channels of trade, and data for 1939 on world production are not available.

H. C. PARMELEE.

ZIONISM. See JEWS; PALESTINE.

ZONTA INTERNATIONAL. An organization established in 1919 to "work for the advancement of understanding, goodwill, and peace through a world fellowship of executive women in business and the professions, united in the Zonta ideal of service." In 1939 there were 143 clubs in the United States, Hawaii, Canada, Denmark, and Sweden, with a membership of approximately 4200. Membership is limited to one outstanding representative for each business or profession in the community, who pledges herself to co-operate with others in its civic, social, and commercial development. The official monthly publication is *The Zontian*. Headquarters are at 59 East Van Buren Street, Chicago, Ill.; Dr. Helen Pearce, Salem, Oregon, president; Miss Harriet C. Richards, executive secretary.

ZOOLOGY. General. The American Society of Zoologists met at Columbus, Ohio, in conjunction with the American Association for the Advancement of Science December 28th to 30th, under the presidency of J. T. Patterson. The British Association for the Advancement of Science was scheduled to meet at Dundee August 30th to September 6th but owing to war conditions this schedule was not fully carried out. The French Association for the Advancement of Science met at Liège, Belgium, July 17th to 22nd. The 7th International Congress of Genetics was originally planned to meet in Moscow in 1937, was postponed to 1938, and then, that date proving impractical, finally met at Edinburgh in 1939 under the presidency of F. E. A. Crew. No Russians attended and the Germans and Dutch were called home by the outbreak of the war. A permanent committee on genetical nomenclature was formed with F. E. A. Crew as Chairman. The 6th Pacific Congress was held in and around San Francisco on July 24th to August 12th. One section was devoted to the consideration of zoological problems connected with Oceanography, Marine Biology, and the fisheries. On April 11th to 15th the Italian Society of Experimental Biologists celebrated at the University of Pavia the 110th anniversary of the birth of Spallanzani. At this time the publication of a

new journal, *Scientia Genetica*, was announced. From the taxonomic point of view the *Systema Natura* of Linnaeus is accepted as the ultimate authority as it was the starting point for the application of the priority rule in the naming of animals. Since this is rare and expensive the British Museum has begun the publication of a photographic facsimile, of which that of Vol. 1 has already appeared. Vol. 1 of a new periodical, *Chromosoma*, to be published as *Abteilung B of Zeit fur Zellforschung u Mikroanatomie* appeared during the year. An important book is Just, *The Biology of the Cell Surface*. Just considers the ectoplasm or outer layer of the cell the most important part. The first life arose, according to Just, through the formation of this outer layer which separated the first living protoplasm from its environment. At a summer meeting of the American Association for the Advancement of Science held at Ottawa, Lillie (*Science* 88 p. 65) said that the future of the zoological sciences must be founded on the course of their evolution up to the present time, and that it is an error to assume that taxonomy, comparative anatomy, embryology, geographical distribution, etc., have played their part and may be ignored in the future development of the subject. The relationships between all of these and experimental zoology is very close and neither can afford to ignore the other. He predicted a great future for "micro evolution," which may be defined as a study of evolutionary forces within available intervals of time, this being more or less bound up with genetics and the gene theory. Biology must make a thoroughgoing physico-chemical analysis of living beings, but this does not necessarily lead to mechanistic conclusions since organisms tend to depart from routine in a fashion for which we have no physical analogy. Evolution has been in the direction of an increasing organization, not in an increasing physico-chemical complexity. The so-called "simplest" organisms are physico-chemically as complex as the highest. According to Lindsay (*Quart. Rev. of Biol.* 14, p. 220), it is of the utmost importance in the study of evolution that we get new evidence of the influence of the environment on the individual. Ritchie (*Nature* 144, p. 534), in the presidential address to the zoology section at the meeting of the British Association on "Perspectives in Evolution," said that life phenomena elude treatment by the laws of thermodynamics, not necessarily because living matter does not obey these laws, but because the unknown conditioning of living organisms is too complex for analysis applicable to inorganic states. In the study of evolution we are too apt to ignore the stability of many organisms (e.g. *Lingula*) and devote our attention to those having greater variability. This phenomenon of stability may throw doubt on the validity of arguments derived from laboratory experiments where variability is emphasized. As noted in earlier YEAR BOOKS the gene is the hypothetical unit responsible for the transmission of hereditary characteristics and the determination of what those characteristics shall be, Rahn (*Am. Nat.* 73, p. 26), argued that evolution depends largely on the formation of new kinds of genes and this could only occur through chemical reactions which must follow chemical laws. The frequency of the appearance of a new unit bears a definite relation to the number of individuals born during a year, and is higher in warm than in cold climates due to the fact that chemical reactions are more rapid in the latter environment. In reptiles there are eight

times as many species in warm as there are in cold, regions.

A part of the programme of the December 1938 meeting of the American Society of Zoologists was a symposium on color changes in animals, which especially dealt with the activities of the chromatophores which by expansion or contraction affect the appearance of the animal. It is generally thought that chromatophore activity is directly controlled by nerve stimuli, but Parker (*Am. Nat.* 73, p. 193) found that these changes in form of chromatophores are due to definite substances discharged from nerve endings. These may be brought from distant glands. Goodrich (*Am. Nat.* 73 p. 198), showed that the chromatophore cell may have an individuality which like that of the whole organism is an expression of its gene complex. Abramowski (*Am. Nat.* 73, p. 208), found that chromatophore change in sharks is caused by hormone action. Sumner (*Am. Nat.* 73, p. 219) thought that in fish the ratio between the amount of light received from above and that received from the background is the direct stimulus leading to color changes. Smith (*Am. Nat.* 73, p. 235) recorded the reactions of chromatophores in isolated fish scales to various stimuli. Brown, (*Am. Nat.* 73, p. 247), thought that color changes in crustacean chromatophores are due to four or five "humorly" controlled pigments. One phase is caused by hormone action, another by its absence. The hormones involved in this action are probably manufactured in the eye stalks. The American Society of Naturalists meeting at Richmond in December of 1938, held a symposium on the "Contributions of Higher Animals to an understanding of Human Biology." Noble (*Am. Nat.* 73, p. 113), showed that throughout the series of vertebrates from fish to man we can recognize the same social components: (1) Group attraction; (2) Dominance behavior; (3) Parental behavior; (4) Suggestion. No social behavior is possible in any vertebrate in the absence of the fore brain. The mechanisms necessary for the above activities have shifted from the corpus striatum of the fish to the cortex of man. Hartman (*Am. Nat.* 73, p. 139), particularly in phenomena connected with reproduction, found as regards degrees of similarity a series man-chimpanzee-monkey. Each of these must be regarded as at the end of its evolutionary branch and is not leading to any other.

Heredity. Timofeef-Ressovsky (*Biol. Zent.* 59, p. 358) found that in treating fruit flies with Roentgen rays the production of mutations is independent of temperature conditions. Haldane and Philips (*Jour. of Genetics* 38, p. 193), stated that within the limits imposed by errors of diagnosis and sampling, it appears that the daughters of haemophilic men bear equal numbers of normal and haemophilic sons. One half of the sisters of haemophilic men are heterozygous for haemophilia. Wepman (*Jour. Heredity* 30, p. 207) got results indicating that there is an hereditary factor in stammering, this being more apt to occur in the male than in the female. An important publication is *Evolution of Genetic Systems*, by Darlington.

Experimental. Parker (*Proc. Acad. Nat. Sci.* 25, p. 499) noted that normal catfish become light or dark in color when put on corresponding backgrounds but that blinded fish are always dark. If only one eye is removed they react as under normal conditions. The reaction to light is partly due to stimuli reaching the eyes and partly to re-

ceptors in the skin. These act on the pituitary, producing "intermedin" which is the immediate cause of the reaction. The eyes react by stimulating the nerves which govern the expansion of the chromatophores.

Harvey (*Biol. Bull.* 76, p. 384) found that enucleated fragments of the egg of the annelid *Chaetopterus* would develop parthenogenetically but would not develop as far as will the eggs of echinoderms. The ascidian *Ciona* is hermaphroditic but self sterile. Morgan (*Jour. Exp. Zool.* 80, p. 19) found that after treating with various acids self-fertilization would occur. This he thought indicated that the egg-membrane acts as a block to the entrance of the sperm which block is removed by the action of the acid. Porter (*Biol. Bull.* 77, p. 233) removed the polar bodies from the egg of *Rana pipiens* (the tree frog), and found that the egg would develop with only the sperm chromosomes; 90 per cent of the eggs developed but development was delayed and abnormal. Pincus (*Jour. Exp. Zool.* 82, p. 85) removed the ovum from a rabbit after treatment with pituitary extract, transplanted this ovum to the uterus of another female; the egg developed parthenogenetically into a normal adult, and this adult when mated produced offspring. (*Proc. Acad. Nat. Sci.* 25, p. 557).

Commensalism is a term applied to a situation where two organisms occupy the same shelter but are independent of one another in all of their activities, as, e.g., the reputed case of the rattlesnake and prairie dog occupying the same burrow. Schwarz (*Am. Nat.* 73, p. 270) considers as commensal the association of man and the common house mouse and thinks that in this association the protection afforded by man allows of the fixing of recessive mutations which could not persist without this protection. (It might be questioned here whether this is not rather a parasitic relationship than a commensal.) Schwarz thinks that man also develops recessive mutations but because of his intelligence is able to protect himself against their consequences.

Protozoa. Wicklerman (*Nature* 144, p. 123) described in *Paramoecium* a sexual process which he called "cytogamy." Two animals come together in the usual conjugation fashion and nuclear division occurs, but the products of this division do not unite. Tartar (*Jour. Exp. Zool.* 81, p. 181) found that *Paramoecium* will regenerate after injury as fully as do any other protozoa. Finley (*Jour. Exp. Zool.* 81, p. 209) reported evidence for sexual differentiation in *Vorticella*. Dixon (*Jor. An. Ecol.* 8, p. 162), found that soil samples from Greenland contained a large protozoan population even though this soil is frozen nine months in the year. Soil which produces the richest vegetation has at the same time the largest number of protozoa.

Hydroids. Morre (*Biol. Bull.* 76, p. 104) found in *Tubularia* at Woods Hole that if the temperature rises above 20° to 21° C the hydranth is lost and the coenosarc retreats into the perisarc. If a dormant colony is kept at 18.4° C it will produce hydroids within three days. Papenfuss and Bokenham (*Biol. Bull.* 76, p. 1) found, contrary to beliefs generally held, that neither ectoderm, entoderm, nor interstitial cells of hydra are able by themselves to give rise to an entire animal. Schmitt (*Am. Nat.* 73, p. 33), studying the records of occurrence of fresh water medusae in the United States found that they have been recorded for 19 states. It is not probable that

recent new records indicate migration, but merely more complete information.

Annelids. McGinite (*Biol. Bull.* 76, p. 113) described the feeding process in *Chaetopterus*. Here by secretion a bag of mucus is formed through which a current of water is passed. The mucus entangles food particles which are then passed forward to the mouth. The New York Academy of Sciences published a key to the species of polychaetous annelids of Puerto Rico by Treadwell.

Mollusks. At Milford, Conn., the Federal Bureau of Fishes has for some 20 years maintained a laboratory for the study of various problems connected with the oyster industry. Announcement has been made of the building of a new laboratory especially well equipped for the study of oyster culture as well as that of other commercially important mollusks. Loosanoff (*Biol. Bull.* 76, p. 171) stated that the clam *Venus mercenaria* (quahog) will go into hibernation at low temperatures, keeping its valves closed at this time. Under temperatures of 21° to 22° C the valves remain open for the maximum length of time; there is no periodicity in these movements.

Crustacea. Coker (*Quart. Rev. of Biol.*) stated that the common fresh water *Daphnia* exhibits extreme variability in such characters as form of head; these are often so great that great-grandparents would be regarded as of different species or even genera from their descendants. It was suggested that these variations, especially in the form of the head, are to be explained by the temperature of the water in which they live and possibly by the size of the body of water. Different lakes may have different chemical composition and this may be responsible. The name "cyclomorphosis" is given to cases where there is a seasonal difference in the animals, e.g., the summer forms being different from the winter. Clarke and Bonnet (*Biol. Bull.* 76, p. 371), found that in the copepod *Calanus* growth is influenced both by food and by temperature. Some conditions promoting growth are undesirable because they lead to a greater percentage of death during moulting. Both growth and survival rate decrease in passing from spring to autumn.

Insects. Wood (*Nature* 144, p. 381) recorded a peculiar flashing, quite different from the normal, in fireflies that had been bitten by a spider. Here the "lantern" showed as a "seething cauldron of points of light." With the development of automobiles and airplanes it has generally been recognized that the problem of insect control has been made more complicated because of the ease with which they may be carried over long distances. Glick (*Tech. Bull. No. 673, U.S. Dept. of Ag.*) recorded observations made on the occurrence and distribution of insects in the air. Insects of various orders were found on airplanes at differing heights up to 14,000 feet. It was noted that dragonflies did not appear in these collections, possibly because they could fly faster than the planes and thus escaped. Cockerell (*Science* 90, p. 353) found that there is a constant supply of insects and spiders as well as plant spores and seeds going from the mainland to islands off the California coast, so that the fauna of these islands duplicates that of the mainland. He thought it possible that this drift from the mainland is great enough to furnish an appreciable part of the food of fishes in the oceanic waters.

Fishes. Norman (*Nature* 143, p. 52) recorded observations on the Remora or "sucking fish" in

which the dorsal fin is modified into a sucker. When the Remora attaches itself to another fish the margin of this sucker is raised, creating a vacuum, and the raising of other parts of the sucker intensifies this action. An adult Remora can withstand a vertical pull of 40 pounds before it lets go and the only way to detach it is to push it forward over the edge of whatever its area of attachment may be. He thought it was probably derived from the pilot fish which accompanies sharks. Its use in fishing is familiar. Coates (*Bull. N. Y. Zool. Soc.* 42, p. 80), found that the electric eel can release a current of 600 volts having a wattage of about 1000, though the average eel can generate only about 550 volts. It is not possible, because of the rapidity of the flash, to use the current for lighting a bulb. McGinite (*Am. Midland Nat.* 21, p. 489) described the habits of the blind goby (*Typhlogobius californiensis*) which lives commensally in the burrows of the shrimp *Callinassa affinis*. One pair of shrimps and one pair of fish live in the burrow at the same time. The fish pair early and mate for life, and either male or female will fight another fish of the same sex if it enters the burrow. Eyes and pigmentation are normal when the animal hatches but disappear after the fish enters a burrow. In the burrow they have no enemies and may live for 10 years. Moy-Thomas (*Biol. Rev.* 14, p. 1) concluded that the elasmobranchs or fishes with cartilaginous skeleton arose in the Devonian and that the fossil *Cladoselache* is very near the ancestral form in structure. Gudger (*Nature* 143, p. 80) found that the whale-shark feeds by taking water into mouth and straining out the food organisms in it by the use of its gill structures. Colbert (*Nat. Hist.* 43, p. 280) reported the discovery in South America of a fish, given the name *Latimeria chalumnae*, which has all of the characteristics of the coelacanth fishes supposed to have become extinct by the end of the Mesozoic era.

Amphibia. Higinbotham (*Ecology* 20, p. 58) experimented with several species of toads in an attempt to analyze their activities. The results indicated an inherent activity rhythm which would be increased after a temperature rise of 10° C., but this did not greatly affect the distribution of these activities.

Reptiles. A traditional belief is that reptiles enjoy basking at high temperatures in the sun. Bogert (*Nat. Hist.* 44, p. 30) found that being variable-temperature animals (i.e., that their temperature is determined by that of their surroundings), and with no regulating mechanism, such as is found in birds and mammals, the upper limit at which they can exist is soon reached as the temperature rises. Desert lizards and snakes, he found, cannot endure a temperature above 120° F. On the other hand, these animals are incapable of co-ordinated movements if the temperature drops below 60° F. Cowles (*Science* 90, p. 465) got similar results from a study of reptiles of southern California deserts where the most heat-tolerant forms have optimum temperatures of 37° to 38° C., showing marked discomfort if the temperature rises much above this. He suggested that the disappearance of the large Mesozoic reptiles may have been caused by increased exposure to the sun's rays which followed the clearing up of the dense atmosphere supposed to have existed in early Mesozoic times. A convenient manual for the identification of snakes is that of Conant and Bridges, *What Snake Is That*, a field-guide to snakes east of the Rocky Mountains.

Birds. Under the leadership of A. A. Allen an expedition from Cornell University to the south and southwestern states secured moving-pictures and sound-records of a number of birds, among them the Coppery-tailed Trogon which had not before been seen since its discovery some 50 years earlier. Poulter (*Sci. Monthly*, July, p. 5), stated that the records of the Byrd Antarctic Expedition showed that this region is "a paradise for students of mammal and bird life." This article gives data on breeding records of a number of birds, among them the snow petrel which breeds on Mt. Helen Washington 51 statute miles from its source of food. Because of the alarming decrease in the numbers of the California Condor, the National Association of Audubon Societies has given \$4500 to the University of Chicago to pay the expenses of a trained observer who will go into the mountains and make observations on this bird. (*Bird Lore* 41, p. 67). Lockley (*Nature* 143, p. 141) found that Manx's Shearwater breeds in burrows, sometimes using those made by rabbits and sometimes making its own. A clutch consists of only one egg. Both sexes take part in incubation, each bird staying on the nest for 3 to 4 days at a time and during this interval is not fed by the other. On dark nights the free bird visits the nest, but not when there is moonlight; this may be through fear of predatory birds. The young is fully feathered in about a fortnight and then goes out to sea. Banding showed that some birds return to the nest year after year and have well developed homing instinct. The puffin deserts the young when they are 49 days old. The young of the puffin and of the shearwater is very fat when abandoned, but the subsequent starvation period thins it so that when it walks to shore it is more active and in less danger of being caught. Densing (*Auk* 56, p. 367) described the nesting habits of the Pied-billed Grebe which builds a floating nest of plant materials. Both sexes incubate until the eggs begin to hatch, after that the labor falls on the female. There is no evidence that the temperature of the nest in any way affects the length of incubation. Lincoln (*Auk* 56, p. 250), stated that a species migration of birds follows along definite lines, but that individuals differ widely one from another. The Herring Gull, e.g., in its first year migrates for long distances; this range is shorter in the second season, and in later ones it may not migrate at all. A bird does not return to a definite locality unless it has previously nested there. He concluded that no hard and fast rules can be given for the migratory movements of any one bird. Herrick (*Auk* 56, p. 244), stated that instead of fixed and invariable habits in the selection of nesting materials a bird, such as the oriole or robin, inherits definite ways of working, with a predisposition to draw from the environment any available materials suited to their methods. Allard (*Science* 90, p. 370) discussed the powers of mimicry shown by the starling, which he considered greater than those of the mocking bird, much more varied in method and range. He mentioned one case in which the starling not only mimicked the voice of the flicker but used its beak to drum on the lid of a box, making the characteristic woodpecker noise. It will imitate the songs of other birds even when these are not in season, indicating memory(?). Of interest is the fact that a given note will have a "run" for a while and will then be discarded.

Stolpe (*Zoöl. Anz. Suppl.* 11, p. 71) made motion-pictures of the movements of humming-

bird's wings and found a vibration rate of from 20 to 25 per second. The tip of the wing describes a figure 8 and on the down stroke the wing twists through an angle of 160° so that the ventral surface is dorsal. Lask (*British Birds* 32, p. 290) described the display of the Blackcock. The male has five attitudes, crowing, display, fighting, circling, and crowding, the latter two being preliminary to mating. Fighting may be either symbolic or actual, the former being mostly the case when on "territory." Gerber (*Beitr. Fort. Vogel* 15, p. 17) gives a long list of cases where birds carry their young; this occurs usually when the birds are in danger. Grote (*ibid* p. 25) said that in South Russia hawks nest in colonies with jackdaws, doves, and starlings. This is due to the fact that groves of trees in which nests can be built are relatively few and widely scattered. The term "Kumpan" has been coined to designate the role that a fellow member of a species plays in the life of a bird. Nic (*Auk* 56, p. 255) discussed the social kumpan in the song sparrow. This bird is generally considered as anti-social, but closer study reveals a large number of social reactions, many of which are continuous throughout the year. There are imitative tendencies leading to location of food, reactions to evidence of fright in companions, social defense against enemies, and territorial behavior that offers protection to individual rights. It is well known that increased light acting upon birds will hasten the time of sexual maturity. Ringoen and Kirschbaum (*Jou. Exp. Zoöl.* 80, p. 173), found that this action is more rapid in males than in females and that in the sparrow it probably is the ocular region of the brain that is the receptor for the light that acts as this stimulus. Burger (*Jour. Exp. Zoöl.* 80, p. 249) found in the starling that a periodic increase in the length of day is effective only when the day lengths are above nine hours. Burger (*Jour. Exp. Zoöl.* 81, p. 333) found that the length of daily exposure to light is the essential stimulating factor in sexual photoperiodic activation, but the intensity of the light is a subsidiary factor.

Mammals. Fisher (*Jour. Mam.* 20, p. 21), recorded observations on the sea otter (*Enhydra lutews nereis*) as studied off the coast of Southern California. The food of these animals consists largely of abalones, but he was unable to determine how the otter manages to loosen the abalone from its attachment to a rock. The abalones are brought to the surface and eaten while the otter is lying on its back at the surface. When mussels are eaten they are cracked on a stone held on the stomach of the animal while it is lying on its back at the surface. In mating, either male or female makes the first advances. In rapid swimming otters lie on their backs with the arms folded across the chest, the legs being the propelling organ. When floating a slight movement of the tail keeps the animal in position, but no other movement is apparent.

Lister (*Bull. N. Y. Zoöl. Soc.* 42, p. 131) stated that no true pigs are native to the western hemisphere but are entirely of old world origin. Domestication in the western hemisphere occurred at different times, using whatever wild pigs happened to be available. Errington (*Ecology* 20, p. 168) found that the muskrat may be either herbivorous or carnivorous, in general all of the members of a colony being either one or the other. Unless in times of severe need these conditions are not greatly changed in time of drought.

Enders (*Ecology* 20, p. 104) noted definite

changes in the mammalian fauna of Barro Colorado Island since it was set aside as an animal refuge, especially noteworthy was the diminishing number of the larger species. This condition he blamed on illegal shooting by poachers.

AARON L. TREADWELL

ZULULAND, zōō'lōō-länd'. A territory in the province of Natal, Union of South Africa. Area, 10,427 square miles; population (1936 census), 361,938 (6142 Europeans, 351,938 natives, 2599 Asiatics, and 1259 of mixed race), compared with (1921 census) 258,356. Capital, Eshowe.

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